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TRANSPORT CANADA

jan.-feb. 1973 jan.-fév.

contents sommaire

title page — page des titres	1
transport council message — message du conseil des transports	2
caribbean assignment	4
our first deputy minister	8
"river pilot" — les pilotes du saint-laurent	13
voyageur excel's	18
marine telecommunications and electronics	20
jets	24
suggestion awards-primes à l'initiative	27
retirements — à la retraite	30
people in the news — ceux qui ont fait les manchettes	32
canadian port and harbour association — association des ports canadiens	34
suggestion awards form — formulaires pour primes à l'initiative	35

transport canada

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Editor: R.G. Towers

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Rédacteur français Jean-Louis Bibeau

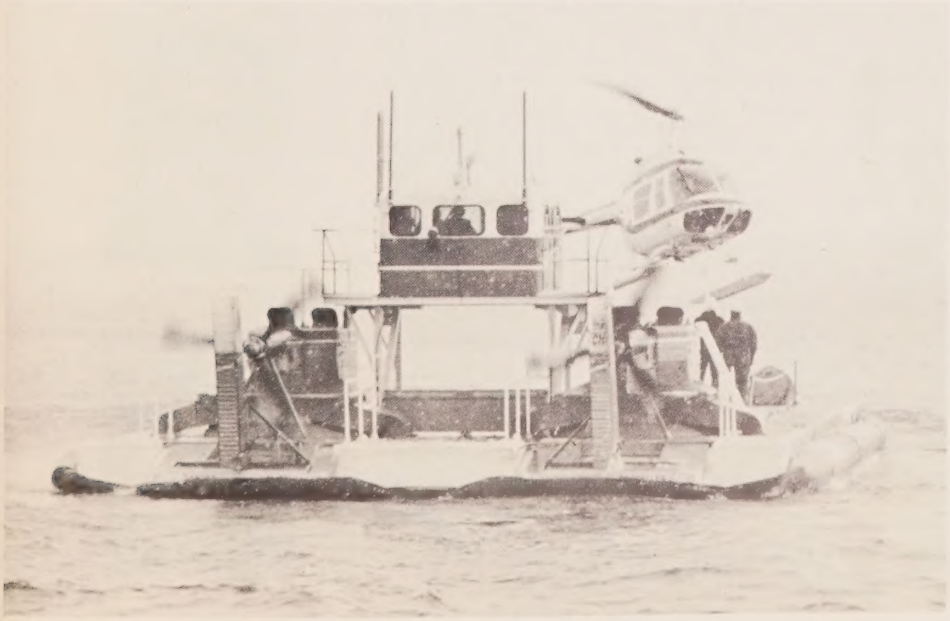
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A first, for the Ministry of Transport. The Voyageur Heavy Haul Air Cushion Vehicle, newest addition to the Ministry's fleet, becomes a helicopter landing pad during performance trials on Lake Ontario. The photograph was taken during a heavy snow squall; other pictures of the trials are printed on pages 18-19.

Cover picture by Gordon Thomas, Directorate of Public Affairs.

Une première pour le ministère des Transports! L'aéroglisseur lourd *Voyageur*, dernière acquisition pour la flotte du Ministère, sert de plateforme d'atterrisage à un hélicoptère au cours de séances d'essai sur le lac Ontario. La photo a été prise durant une chute de neige abondante; on peut voir d'autres photos de ces essais aux pages 18 et 19.

La photo de la page couverture a été prise par Gordon Thomas de la Direction des Affaires publiques.

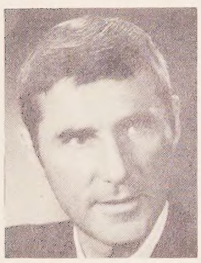


transportation council message


Hon. J. Marchand

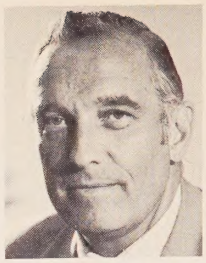

J. Guay


M.D. Armstrong


Andre Laframboise


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C. Carriere


O.G. Stoner


G.A. Scott


I.C. Cornblatt


Pierre Camu


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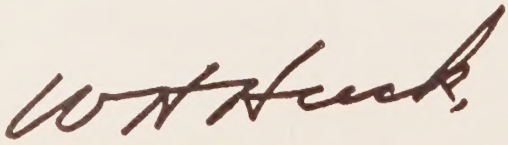

John Gray

Air safety is, of course, the concern of all who are directly or indirectly involved in civil aviation whether they be the operators of aircraft, the passengers, owners of commodities moved by air or those in government upon whom responsibility falls for the administration of the duties imposed upon the Minister under the Aeronautics Act and the authorities vested in him.

The threat and, indeed, actions against civil aviation around the world during the past several years continue to require the closest attention. While we can never be satisfied with the progress we achieve toward diminution of the effects of such threats, substantial progress toward this end is nevertheless being made. In a matter such as this having the widest possible behavioral, political, regulatory, technological and cost implications an extraordinary degree of cooperation and coordination is, and will continue to be, required from all who have responsibilities in these areas. I am confident that we can anticipate the cooperation needed to deal effectively with this worrisome problem.

Apart from the problem just mentioned, the consequences of failure to realize an extremely high level of safety in an industry where failure to do so can be catastrophic requires the most careful and continuous attention of all of us in the the Air Administration. While we obviously must not let down our guard for a moment I believe we can take some satisfaction from the progress that has been made in recent years in all of those areas identified with the maintenance and improvement of safety in the air.

100% safety in an industry, the very essence of which is mobility, is probably impossible of achievement but the search for ways to reduce the risk must be emphasized, expanded and accelerated as aviation continues to grow.



message du conseil des transports


E. J. Benson


Del Taylor


Roy Illing


C.C. Hall


Robert Grieve


Stuart T. Grant


W.H. Huck

La sécurité aérienne préoccupe assurément tous ceux qui sont concernés par l'aviation civile i.e. les exploitants d'aéronefs, les passagers, les expéditeurs des marchandises transportées par voie aérienne ou les fonctionnaires du gouvernement chargés de l'exécution des tâches relevant de l'autorité du Ministre, conformément aux dispositions de la Loi sur l'aéronautique et au mandat qui lui a été confié.

Les menaces qui pèsent sur elle et, naturellement les attentats perpétrés contre l'aviation civile du monde entier pendant ces dernières années, continuent à exiger de notre part la plus grande attention. Quoique nous ne puissions jamais nous en trouver satisfaits, nous n'en avons pas moins obtenu de sérieux résultats en fait de diminution des risques auxquels ces menaces donnent lieu. En pareille matière où les incidences sur le plan du comportement, de la politique, des règlements, de la technique et de l'économie sont extrêmement nombreuses, il faut et il faudra que les personnes investies d'une responsabilité dans ce domaine collaborent et coordonnent leurs efforts sans réserve. Je suis convaincu que nous pouvons compter sur la coopération voulue pour traiter de ce problème préoccupant.

En dehors de celui-ci, le fait de ne pouvoir garantir un très haut niveau de sécurité dans un secteur d'activité où un échec à cet égard peut s'avérer catastrophique, exige de tous ceux de nous qui travaillent au sein de l'Administration des transports aériens une attention soutenue et une grande vigilance. Si nous ne devons pas, de toute évidence, ouvrir notre garde un seul instant, je crois que nous pouvons tirer une certaine satisfaction des progrès qui ont été accomplis ces dernières années dans tous les secteurs touchant de près la préservation et l'amélioration de la sécurité aérienne.

Même s'il est probablement impossible de parvenir à une sécurité totale dans une industrie qui se caractérise fondamentalement par sa mobilité, il faut mettre l'accent sur la recherche des moyens destinés à réduire les risques, l'étendre et l'accélérer à mesure que l'aviation poursuit son expansion.

W.H. Huck

Caribbean Assignment

by

Capt. John Seck

The Caribbean assignment began in a February blizzard, with a moving van stuck in my Ottawa laneway and a snowplow clearing the road to enable the truck to move out. Then southbound, and my four-year-old son said as the plane landed, "but daddy, why is the snow so green down here in Barbados?"

Upon the request of CIDA (Canadian International Development Agency) I was seconded early in 1971 for 18 months by the Ministry of Transport, Harbours and Ports, to update port and marine administration in St. Vincent, St. Lucia and Dominica, the windward chain of the Lower Caribbean Islands. Although I knew these islands from my seafaring days as a second and first officer, I had not visualized the changes which had taken place since then.

St. Vincent

Upon my arrival in St. Vincent, a tariff act and by-law was proclaimed, based on a corporate Port Authority with council and chairman. The act and by-law are now being implemented in St. Lucia, St. Vincent and Dominica. An election was pending when I arrived in St. Vincent and the government was awaiting the outcome. Therefore, only a revamped administration, management and port operation was introduced.

It was difficult to update port operations in St. Vincent as there was a severe shortage of shedded storage capacity. If the Harbours and Ports Division (MOT) had not provided the necessary supplies, it would have been difficult to begin the assignment at all. The deficiencies of shedded storage will now have been overcome and the port should have a very viable operation.

Ports and general marine administration in St. Vincent were also my responsibility, and approximately twenty islands in the Grenadines were surveyed by sextant and leadline for harbour and dock approaches. Later, with the help of the British Admiralty, aerial and marine surveys were undertaken and a program by priorities for marine surveys was established for the next five years. Also, a report on navigational aids was prepared for St. Vincent and the Grenadines, with the help of the Aids to Navigation Division (Ottawa), which provided up-to-date information on navigational aids throughout my stay.

Search and Rescue

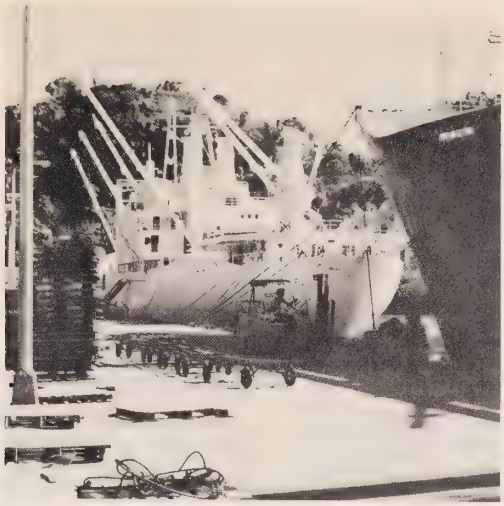
Navigation aids and search and rescue operations are serious matters in these islands. As evidence, a continuous string of foundering vessels such as coastal steamers, schooners, fishing vessels and yachts which brought many a sleepless night until the air-sea rescue was called off or the vessel and crew were rescued. Once, upon the request of the Premier of St. Lucia, we steamed out with a flat bottom police launch approximately ten miles off the coast. This later extended to 60 miles with no food all day from nine until twelve midnight, but the vessel and crew were located and towed into port. A complete policy paper on an air-sea rescue was introduced for the Windward Islands and is at present being reviewed by the U.S. Coast Guard.

During the latter part of the assignment in St. Vincent a volcanic eruption took place and we prepared for the evacuation of some 12,000 people by sea, in case the roads were blocked. I chartered an airplane and inspected the evacuation beaches and drew up a complete evacuation plan. This later served as a guideline to the British Royal Navy and was used by the government evacuation centre.

St. Lucia

In November '71 I proceeded to St. Lucia on the request of the Premier to re-organize the Ports of Castries and Viuxfort.

Upon arrival the Port of Castries was at a near standstill with no work-



New harbour port facilities, Kingstown, St. Vincent.



Queen's birthday trooping of the colours parade, St. Vincent.



General view of the harbour, showing new dock area in the foreground, St. Vincent.



Unloading a Saguenay ship at the port of St. Vincent. In the foreground is the schooner unloading area.

able aprons, insufficient shedded and open storage space. Cargoes were being handled in breakbulk and the port was not mechanized or palletized. Cargoes were dumped on aprons and left for any length of time. Some were warehoused by customs, but the sheds were full of cargo and as the Premier put it, to find one's goods, one required a gang of five to eight strong-armed porters who waded through the cargo until found. The problem had to be solved in nine months, the time alloted for the assignment.

One policy in St. Lucia which produces results is the "back to the wall policy". To break down the program, the tariff act and part of the by-law were introduced and passed by the House of Assembly and proclaimed in four months. A Port Authority was established with council and chairman, a port managers department, an operation department, divided into cargo handling, port marine, pilotage and aids, and an accounting department with expenditures and revenue separated into marine and cargo handling dues.

A British Government grant provided us with funds, and automative equipment was ordered and received from Britain and made operational.

As no port staff was available on the Island, executive staff, support personnel and labour had to be trained into all systems. Procedures were established and made fully operational. Based on the new tariff, port revenues were raised from $70,000 to $131,000 Eastern Caribbean Currency in three months with an approximate annual revenue of $1.6-$1.7 million, netting $1 million ECC per annum.

In St. Lucia, supermarkets had been stocked with dented cans and damaged packaging. As this port became mechanized and organized, shedded storage became available, and the dented cans and damaged packaging gradually disappeared. The merchants began shipping goods which had not been seen on the shelves before. A drop in unit price was noted on certain items.

In conjunction with the St. Lucia Government, a program for port development of $7.2 million ECC was introduced with three berths of five hundred feet each at a 35-foot depth, and one berth of 400 feet at a 30-foot depth with an approximate upland of 25 acres to be created. The dredging program for this development began before my departure.

The program at St. Lucia was completed only through the cooperation of all concerned. The Premier, Ministers and senior civil servants and all Port Authority staff and support personnel worked relentlessly to accomplish the goal, as did such organizations at the British Development Agency, the Royal Navy, British Crown Agency, Caribbean Development Bank, and the United Nations, C.H.C. Trinidad and staff of CIDA in Ottawa. Invaluable assistance was received from the Ministry of Transport through Bert Cavey, Chief, Harbours and Ports; Fred Nicholl, Superintendent Projects, Harbours and Ports; Fred Lawton, Superintendent, Traffic and Revenue, Harbours and Ports, and from our Division and staff in M.O.T. Aids, as well as the Department of Public Works, Ottawa in implementing the fendering system in St. Vincent.

Dominica

In may 1972, upon the request of the Premier, a field trip to Dominica was made to discuss and introduce legislation, port administration and operations. Later we trained all executive staff and others from Dominica in St. Lucia and set up systems and procedures. All of this is at present being implemented and the Port Authority Act should be proclaimed before the year is out.

This has been a hard, but rewarding assignment in terms of accomplishment and friends made, and it has been my pleasure and that of my family to have been part of such a program.



Preparing barge landing facilities, Dominica.

Dredging operations for the new harbour St. Lucia, the cruise ship Southwind dwarfs the existing harbour facilities.



Active volcano "Soufrice", St. Vincent.

Dredging operations for the new harbour St. Lucia, the bow of the cruise ship Southwind dwarfs the fishing boats in the harbour.





OUR FIRST
Deputy Minister

by

Thomas E. Appleton

William Smith arrived in Ottawa in 1867 as secretary of the newly formed Department of Marine and Fisheries. He was a devoted public servant with wide experience of shipping after a career of 27 years in imperial and colonial appointments; then aged 46, his selection for the top marine job in the Dominion of Canada was a tribute to his record in negotiation of complex issues, and to his reputation as a man of few words who said what he meant and meant what he said.

For the first year of Confederation the Department functioned without a formal constitution which did not come about until the *Marine and Fisheries Act* was passed on 22nd May, 1868. That evening, as he walked from the West Block to his home at 162 Daly Avenue, Mr. Smith might well have wondered about his responsibilities; the First Session of the First Parliament of Canada had passed no fewer than 93 Acts that day. Apart from the charter of his Department, these included the *Civil Service Act* which appointed a quorum of Deputy Heads to regulate the entire government service and other legislation which settled the shape of official life for years to come. A week later, on 29th May, 1968, William Smith received his seal as Deputy Minister of Marine and Fisheries, Member of the Civil Service Board, and Member of the Board of Auditors. It was a challenging position for which he was well fitted.

Born at Leith in Scotland in 1821, William Smith went to the High School of Edinburgh before a Treasury appointment to H.M. Customs in 1840. After a couple of years at the Port of Leith he was transferred to Saint John N.B. as second clerk of the Customs House where his ability soon marked him out. By 1850 he was Surveyor of Shipping and in 1855 the New Brunswick Government made him Controller of Customs and Registrar of Shipping. Three years later he was Receiver-General of Admiralty Droits — in other words the custodian of moneys due to the Province in settlement of marine law cases - and in 1865 the Governor appointed him as Commissioner for New Brunswick on the West Indian Trade Commission. By this time Smith was the leading marine official in the Province and, as a man of fair dealing, he became something of a public figure in Saint John; in his private life he was a director of several companies ranging from gas lighting to life insurance.

Although cast in the stern mould of duty, William Smith was not without a sense of humour and he could exude charm when he chose. In 1860, writing to Sir Samuel Leonard Tilley who was then a member of the Legislative Assembly, he asked for money for a pet project:

"There is a blank, vancant space above the Custom House front door for the Royal Coats of Arms. I am afraid if it is left in its present state and His Royal Highness should unfortunately look up and see it, it might be attributed to a want of loyalty and might have a serious effect on the sale of Provincial debentures in London. Could something not be done for it out of Govt funds ...? ...it is a great eyesore as at present. I presume it could be done without interfering with the great question of the day which is at present shaking the very foundations of society, viz Chipman's without waterclosets or Reed's with."

His selection for Deputy Head of the Department of Marine and Fisheries came from the Hon. Peter Mitchell, the Premier of New Brunswick, 1866-7, who brought that Province into Confederation and became Minister of the Department in Sir John A. Macdonald's coalition government of Canada.

William Smith, Deputy Minister of Marine and Fisheries 1868-96. Mr. Smith was received by Queen Victoria at Buckingham Palace about 1876 and is shown in levee dress of the civil uniform worn by Privy Councillors, Ministers and Deputy Ministers. Mackenzie King is believed to have been the last Prime Minister to use the Privy Council uniform.

(courtesy of the New Brunswick Museum)



The difficulties facing our first Deputy Minister were considerable. Shipping was in a state of turmoil following sweeping changes in British law, some of which were received with unconcealed opposition from the powerful Canadian shipowning lobby which represented thousands of sailing ship operators engaged in international trade under marginal economic conditions. It was all very well for Britain, as the greatest shipping nation, to put its house in much needed order, but questions such as certification of masters and mates, restrictions on the loading of ships, and safety requirements for steam vessels were received without enthusiasm in Canada. As a result the Deputy was sent to London where in crucial discussions he was able to bring about realistic amendments. On the Fisheries side, Canada had serious differences with the United States over questions of reciprocity which, in the impoverished state of the Dominion, affected the livelihood of the Maritime Provinces.

Besides technical matters there was the administrative problem of controlling a Department of continental proportions from remote Ottawa, a city of which, only 20 years previously, an American commentator had remarked that it was an excellent choice as the Capital of Canada, because invaders would get lost in the woods trying to find it. With the addition of British Columbia and Prince Edward Island, administration became even more remote.

On top of all this the Deputy's task was compounded by the political atmosphere of the era. His career in New Brunswick had advanced under Peter Mitchell's Liberal Administration but, as Minister of Marine and Fisheries under Macdonald, Mitchell was a Liberal in a predominently Conservative ministry. Although a firm believer in the political neutrality of his position as Deputy Head, Mr. Smith was well aware of the pitfalls lying in wait for a senior civil servant when advice to his Minister might be subject to misinterpretation. But Sir John A. Macdonald appears to have recognized William Smith's ability and integrity, probably because it was brought to notice by the Deputy's outstanding staff work for the Washington agreement of 1871 in which, among other matters, fisheries policy was part of Macdonald's first significant international treaty.

Throughout these formative years in the Department, the Deputy provided strong professional leadership. Budgets were small in those days of very tight money, the entire headquarters staff numbered no more than 25 with perhaps 1200 in the field, and with the line system of responsibility then in force practically every contentious issue, no matter how minor it might be considered today, ended up for decision on the Deputy's desk. With Treasury Board pressure adding emphasis to his natural Scots frugality, Smith bore down heavily on the dollars and cents and was the terror of the steamboat inspectors whose expense accounts were then a large part of the travelling budget. But if he was autocratic in such matters he knew only too well that the Civil Service was based on patronage of the most outrageous kind and he found consistently for fair and impartial staff policies. As a Civil Service Commissioner, Smith gave evidence before a Parliamentary Committee formed in 1877 to investigate government staffing; he spoke forthrightly and helped the Committee to find that political patronage was "...almost unchecked and its results correspondingly bad. There is no Departmental examination of nominees, and no other guarantee of their suitability in any respect than the political recommendation on



Ottawa in 1877. The Department of Marine and Fisheries was located in the West Block seen distantly to the right. The photograph was taken on what is now Confederation Square. Note the Horse drawn street-car and the cab rank in Wellington Street.

(courtesy, Public Archives of Canada)



which they are appointed."

Not unnaturally Mr. Smith made bitter enemies. Two years later, on 17th March, 1879, Dr. Walken of Burrard's Inlet wrote to Sir John A. Macdonald to thank him for the appointment he had received as Assistant Inspector of Penitentiaries in British Columbia. It was typical of thousands of similar letters except that it finished with an unsolicited piece of advice for the Prime Minister:

"One man the government must get rid of, that is Wm. Smith, Dy. Minister of M. and Fisheries. He will make any government unpopular. He is so rude and infernally mean and withal such a liar. He is chiselling me out of money in a fee attending a man in the shipping..."

But Sir John knew a good man when he saw one and the Deputy went firmly on his way under& successive Ministers, Sir Albert Smith (1873-78), J.C. Pope (1878-82), until another slight brush occurred in a different context under A.W. McLelan who was Minister from 1882-85. By this time it had been brought to the Prime Minister's notice that William Smith's salary was only $3,200, an improvement over his starting pay of $2,600 in 1868 but still less than the going rate for most Deputy Ministers. There had been a proposal also to recruit a young man into the Department to work with Smith but the newcomer was a Liberal and when Sir John A. Macdonald dropped a note on both these points to his Minister of Marine in 1885, Conservative A.W. McLelan replied to the Prime Minister on 16th November with certain reservations:

"With all due deference to your opinion of Mr. Courtney I think he and Smith would make the Department quite too gritty for satisfactory management by any member of this Government".

After instancing other considerations the Minister went on to remark that:

"...it is in this way that unfriendly officers often catch us with our breeks down."

But here again Mr. Smith's solid and impartial reputation stood the test, for McLelan wound up his long letter to "My Dear Sir John" by assuring him that:

"if you think it advisable I will when next estimates are being prepared or before bring up Smith's case; on the whole he is a good officer and it is only in some little matters that I have any fault with him."

Unfortunately for Mr. Smith, the Minister's application to Treasury was unsupported and no increase of salary was forthcoming. By this time the Deputy must have come to the conclusion that it might be better to outflank his Minister. On 16th April, 1888, when G.E. Foster was Minister, another appeal landed on Sir John's desk from an Ontario member of Parliament, J.C. Paterson:

My Dear Sir John,

I hope I am not taking a liberty in drawing your attention to the case of Mr. William Smith, Deputy Minister of Marine. He is not a popular man but that is because he has been a faithful public servant and has not conciliated politicians at the expense of the public interest. Mr. Smith has been in the public service all his life. He has been twenty-one years in the service of the Dominion and may be said to be out of quarantine — of age in fact — yet he is at the foot of his class at the minimum salary allowed by law to a Deputy Minister although men who are his juniors in the service by many years are receiving $800 a year more than he is. My sole interest in the matter is that from my intercourse with him I have come to have a respect for this faithful watch dog. I supposed that he was getting a much

larger salary. Cannot you do something for him? There are men in the public service today who are utterly useless who are getting their $4,000 a year while this man performs the most onerous public services and has to resist a great deal of pressure in the discharge of his duties in order to cut down the public expenses. Cannot you rectify this injustice and give this man a moderate increase? Praise, when he is dead, will be of little use to him, while some recognition now would be gratifying to him as a matter of sentiment and would also be practically substantial.

Trusting that you will do me the favour to look into this matter,

I am,
Very faithfully yours,

J.C. Paterson

Praise or no praise, William Smith was not one to seek it, but he was far from dead and nearly as far from his raise; not until nearly 5 years later, in October, 1892, did the Treasury relent to the extent of making his salary $3,600, and so it remained until retirement.

Mr. Smith was now 71 years of age, and as he came to the last few years of service under seven Ministers, the 'watch dog' side of his stony character was in the ascendant; perhaps it was partly due to his hardening arteries that the Department of Marine and Fisheries which he loved so much entered a phase which was notable for tablets of stone rather than trails of fire in the sky. On 1st May, 1896, Mr. Smith retired to pension, in good health, and went to England with his second son Lieutenant George F. Smith, late of the Royal Navy, who was on his way to Wellington, New Zealand to continue the family tradition, as engineer on the Harbour Board. The eldest son, Dr. Lapthorn Smith, was practising in Montreal. But it was Indian Summer for our first Deputy Minister who died in Ottawa on 6th March, 1897, after a very short illness. The entire staff of Marine and Fisheries at headquarters, all 44 of them including the steamboat inspectors who never really forgave him for surveillance of their expense accounts, attended the funeral as did everyone who was anyone in Ottawa.

Of the 12 Deputy Ministers responsible for our marine activities since Confederation, none have so far exceeded his record of 29 years in office — although Alexander Johnston made 23 years between 1910 and 1933 — which is unlikely to be repeated; under modern conditions it is also unthinkable that any public servant should continue in harness until age 75. In his personal life William Smith was an unpretentious man and as an official he sought only to serve Canada with impartial zeal according to his high principles. On both counts it can be said that he helped to lay the foundations on which we now stand. Robert Burns wrote a line in *Tam O'Shanter* which might apply:

"Weel done, Cutty Sark"

The author wishes to thank the following for kind assistance:

Mrs. M. Robertson, Archivist, Mrs. J.E. Cushing, New Brunswick Museum, Saint John; Mr. J. O'Brien, Manuscript Division, Public Archives, Ottawa; Mrs. B. Larose, Picture Division, Public Archives Ottawa.

Editor's Note

Although today's transportation problems are far more complex than they were 85 years ago, many of the situations facing a deputy minister appear strikingly similar.

Les Pilotes du Saint-Laurent

Sur le Saint-Laurent, 139 milles séparent Québec du port de Montréal et, chose incroyable, Louis DeVilliers en connnaît chaque pouce. Il n'a pas le choix.

Car Louis de Villiers et les autres pilotes du Saint-Laurent font annuellement plus de 19 000 voyages en amont et en aval du fleuve entre Québec, Trois-Rivières et Montréal. Un chenal de 800 pieds de large dragué sur 100 milles, des courants sournois, des conditions atmosphériques imprévisibles et un hiver qui semble se jouer de la navigation dans la voie maritime, lancent aux pilotes de fleuve leur défi quotidien; amener à bon port des navires venant du monde entier.

A partir des Escoumins, en aval de Québec, jusqu'aux Grands lacs et Thunder Bay, les navires de haute mer et des Grands lacs sont dirigés à travers les voies d'eau par des pilotes habiles et expérimentés.

"La plupart des pilotes, nous dit Jacques Lacasse, président de la Corporation des pilotes du Saint-Laurent central, ont en moyenne 11 ans d'expérience sur le fleuve et deviennent pilotes à l'âge comparativement élevé de 33 ans. Cela s'explique par les conditions rigoureuses que doivent satisfaire les candidats pour devenir pilotes sur le Saint-Laurent."

D'abord, l'apprenti-pilote doit posséder un certificat de capitaine ou de premier lieutenant. Après être passé devant un comité et avoir réussi à l'examen d'entrée du ministère des Transports, le candidat doit faire un apprentissage de deux à cinq ans au terme duquel il doit se



Le pilote Jacques Lacasse faisant un signe amical au "Ralph Misener".



La route de l'océan: un navire remonte le fleuve en direction de Montréal.

présenter à de nouveaux examens en vue d'obtenir le brevet de pilote de la catégorie "C". Ce brevet atteste que le pilote possède une connaissance approfondie d'une certaine voie d'eau et l'autorise à piloter des navires ne dépassant pas une jauge donnée. "Un pilote, ajoute Jacques Lacasse, conseille le commandant du navire sur la navigation et les manoeuvres à accomplir sur une certaine route. Il n'appartient pas à l'équipage du navire."

DES HOMMES DU FLEUVE

En route pour Détroit avec sa cargaison d'acier laminé provenant de Ghent en Belgique, l'*OCEAN TRITON*, 526 pieds de long, 7 200 tonneaux de jauge, est l'un des milliers de navires qui empruntent le chenal maritime et la voie maritime du Saint-Laurent. Lorsque l'*OCEAN TRITON* aura atteint Détroit, le commandant Dimitrois Keroulis aura fait monté à bord au moins une demi-douzaine de pilotes dont le premier aux Escoumins, quelque 200 milles en amont du Golfe du Saint-Laurent.

Un certain sentiment de confiance s'installe sur la passerelle du navire dès l'arrivé du pilote. A peine perceptible au début, il devient assez vite évident dans les manoeuvres assurées de l'homme de barre et du second. Et lorsque le capitaine du navire quitte la passerelle pour aller déjeuner, il sait que le navire est dans de bonnes mains. A la hauteur des Plaines d'Abraham, environ dix heures après avoir quitté Les Escoumins, on procède au changement du pilote. Pendant les douze heures de voyage qui restent entre Québec et Montréal on changera encore une fois de pilote, vers le milieu du parcours, à Trois-Rivières.

Tranquillement, les navires dépassent, à la vitesse de 15 noeuds, les petits villages de Batture-du-Cap-à-la-Roche, Lotbinière et Vieille-Eglise. Le fleuve est un monde en lui-même avec ses propres signaux, son rythme distinct et son atmosphère unique. Il exige des marins qui l'empruntent la quasi-perfection; ici, les erreurs ne sont pas tolérées.

FORMATION EN MER

Naturellement, la formation est d'une importance capitale pour devenir pilote. Au Québec, il y a deux centres de formation à cette carrière: l'Institut de technologie maritime de Rimouski qui existe depuis 1944 et, ouvert récemment, le CEGEP François-Xavier Garneau dans la ville de Québec. Cette dernière institution a loué un cargo océanique d'un groupe d'hommes d'affaires de la vieille capitale, précisément en vue de l'entraînement. Ce navire qui est utilisé à des fins commerciales par les propriétaires, sert en même temps de navire-école pour les élèves-officiers du CEGEP qui y font leur service en mer.

La formation requise pour embrasser une profession telle que le pilotage demande un nombre considérable d'années dont les différentes étapes sont les suivantes: sciences nautiques; 4 ans; certificat de capitaine ou de premier lieutenant: 2 ans; d'apprenti-pilote à pilote breveté: 3 ans au minimum; pilote de catégorie "C" (pour les



Le pilote Yves Desrochers observe l'homme de barre de l'"Océan Triton" en train de changer de cap.



Le bateau-pilote de Trois-Rivières s'approche de l'"Océan Triton" pour un échange de pilotes.



Le pilote Louis Devilliers entame une manoeuvre dangereuse: escalader les vingt pieds qui le séparent du pont principal de l'"Océan Triton".



Descendant le Saint-Laurent en direction de l'océan un navire croise l'"Océan Triton" qui remonte le fleuve.

navires de moins de 5 000 tonneaux): 3 ans; pilote de catégorie "B" (pour les navires de moines de 8 000 tonneaux): 2 ans; et enfin le classement sans restriction, catégorie "A".

L'importance croissante du pilotage sur le Saint-Laurent a suivi étroitement l'aménagement du chenal maritime en tant que voie navigable draguée.

En 1729, Abraham Martin dont l'instructeur avait été Testu de la Richardière devient le premier pilote royale à conduire des navires sur le fleuve. Au début, la plupart des pilotes chargés de guider les navires sur le Saint-Laurent provenaient du village de Lotbinière, sur la rive sud. Vivant près d'un endroit particulièrement dangereux du fleuve, les habitants du village y avaient acquis une connaissance et une expérience approfondie des conditions locales de navigation. "Les Maisons de la Trintié", premiers établissements de pilotage, furent fondées en 1805 à Québec et à Montréal. Le fleuve n'avait alors fait l'objet d'aucun aménagement. Ce n'est qu'en 1854 que les premières opérations de dragage ont eu lieu avec l'établissement d'un chenal de 16 pieds de profondeur et 250 pieds de largeur. En 1900, la profondeur du chenal atteignait 27 pieds et le devait être ultérieurement approfondi et élargi à différentes reprises pour atteindre les dimensions qu'il a aujourd'hui: 1000 pieds de largeur par 35 de profondeur. En amont de Québec des travaux de dragage se poursuivent pour creuser le chenal jusqu'à une profondeur de 41 pieds.

Au cours des années, de nombreuses sociétés et associations de pilotage ont vu le jour. En 1860, la Corporation des pilotes de Québec était formée; en 1918, c'était au tour de la Société des pilotes de Québec d'apparaître, à cause du nombre croissant de pilotes et, peut-être, des différents champs de responsabilité, on forma au début des années cinquante la Fédération des pilotes du Saint-Laurent qui regroupait les membres de trois corporations: celles du Bas-Saint-Laurent, du Saint-Laurent central et du port de Montréal. Aujourd'hui, la Fédération des pilotes est membre de l'Association internationale des pilotes maritimes, organisation mondiale de pilotes.

Traditionnellement, bon nombre des pilotes du fleuve sont originaires de petits villages comme Lotbinière échelonnés le long des rives du Saint-Laurent. Aussi n'est-il pas étonnant d'apprendre que la grande majorité des 140 pilotes travaillant entre Québec et Montréal est d'origine canadienne-française.

Même en été, malgré tous les points de repère installés le long des 180 milles du parcours entre Les Escoumins et le port de Montréal, la navigation sur le fleuve reste difficile et délicate mais avec l'arrivée de l'hiver, les règles gouvernant la navigation sont complètement différentes car le fleuve subit une véritable métamorphose.

LE PILOTAGE EN HIVER

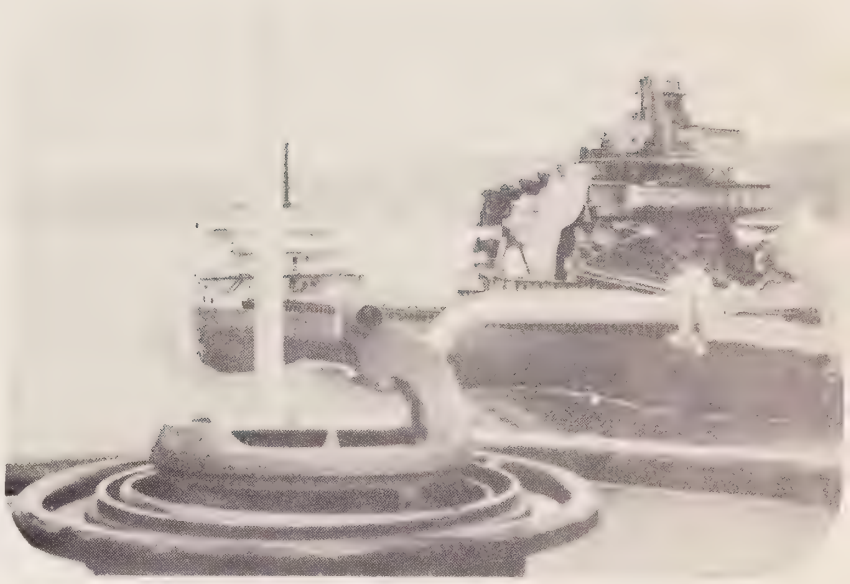
Les points de repère terrestres et les bouées du chenal qui égayent le paysage et facilitent la navigation

l'été, disparaissent. Le fleuve prend des teintes grises et blanches; la neige et la glace bornent maintenant le chenal. Même si celui-ci est continuellement rouvert par les brise-glace de la Garde côtière canadienne, les glaces dérivant sur le fleuve représentent un danger constant pour les pilotes. Les coups de vent soudains et les rapides baisses de température y rendent la navigation presque impossible. Les rafales de neige, le volume réduit d'eau et les courtes périodes de marée combinés à la réduction de vitesse imposée aux navires dont l'étrave n'est pas renforcée, contribuent à faire du pilotage en hiver, une entrepise considérablement plus risquée que dans les mois d'été.

"Pourtant, même en hiver, poursuit Jacques Lacasse, il n'y a pas de relâche dans nos horaires. Tous les pilotes font en général quatre à cinq voyages par semaine."

Aujourd'hui, avec plus de 2 000 milles de voies d'eau navigables entre le Golfe Saint-Laurent et Thunder Bay, plus de 500 pilotes guident la navigation maritime et parmi ceux-ci, 250 travaillent en aval de Montréal.

Avant février de l'an dernier, le recours à un pilote pour remonter le fleuve ou le descendre vers le golfe était facultatif. "La majorité des gros navires, dit Jacques Lacasse, faisaient appel à des pilotes". Actuellement, une loi fédérale oblige les navires de plus de 1500 tonneaux à se faire piloter sur le Saint-Laurent. "C'est réconfortant, fait remarquer Jacques Lacasse, de savoir que le bateau qu'on croise est piloté par un homme qui sait ce qu'il fait".



Il y a toujours un navire sur la route de l'océan comme en témoigne ce navire que croise l'"Océan Triton".



Du haut de la passerelle de l'"Océan Triton" le pilote de navire Louis DeVilliers étudie la multitude d'amers et de bouées qui l'aident à mener son navire à bon port. Noel Bélanger (à gauche), pilote stagiaire depuis trois mois, observe l'interminable défilé de balises le long du chenal et les éléments intéressants sur le cours d'eau.



Canadian Coast Guard helicopter lands on the deck of the Heavy Haul Air Cushion Vehicle Voyageur. This is a first for the Ministry of Transport.



Unloading cargo from the deck of the Voyageur.

excels



Inspection and repair work to navigation aids, St. Clair River.



Simulated rescue operation from the deck of the CCGS Simcoe.



Towing the CCGS Simcoe, displacement tonnage of the Simcoe 460 long tons.

marine telecommunications and electronics

One of the significant aspects of the reorganization of the Canadian Marine Transportation Administration is the formation of the Marine Telecommunications and Electronics Division (OMT) within the newly established Operations Branch of Marine Services.

OMT consists of five areas of specialization, electronic navigational aids (guidance systems), ship electronics, communications, computers and radio regulations. The OMT personnel are already projecting well ahead of their present day-to-day duties and are researching more efficient and reliable electronic systems, reviewing operations for updating, and planning the electronic portions of automated systems devoted to improve services to Mariners.

Field activities will continue to be centered around the ship electronic workshops and other marine centres such as Decca and Loran sites, coast stations and local maintenance centres.

Ship Electronics

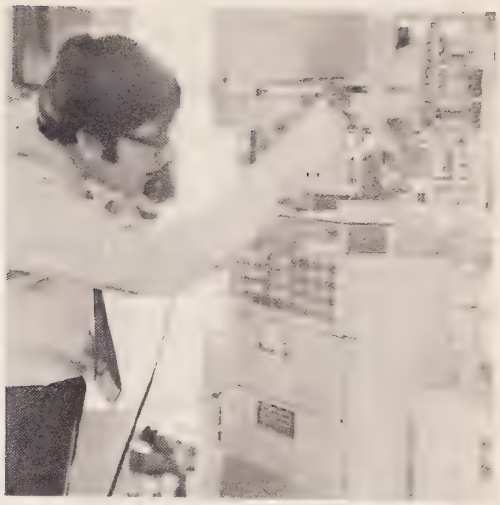
Headquarters specialists are fully dedicated to CMTA for all aspects of design, installation and maintenance of electronic systems for new, and commissioned Ministry-owned vessels. They provide administrative advice in the planning, programming, budgeting, and evaluation of projects. Their major responsibility is to the Canadian Coast Guard fleet of over 90 vessels, with the responsibility for electronics in vessels ranging in size from barges to large icebreakers, and the electronic systems installed in helicopters and hovercrafts, used by the Coast Guard.

A variety of electronic aids not normally known to the average citizen, are carried aboard ships. In addition to radar and radiotelephones, complex systems such as steering control, communications control, shipborne navigational guidance quipment, radio teletype, and electronic propulsion monitoring are found in modern vessels.

The ship electronics group sets the national standards for all electronics aboard ships. This goal is obtained by research and development, by producing equipment specifications, installations practices, cost effectiveness studies and investigation of recurring general faults. Marine telecommunications officers presently based at regional offices and/or ship electronic workshops will continue to be responsible for programme suggestions, individual installation specifications, installation and maintenance. Staff at the ship electronics workshop will be performing the day-to-day electronic equipment fault, finding and correction, preventive maintenance and implementation of approved modifications for better performance. This same marine electronics service is now available to all other administrations within the Ministry and to other departments upon request.

Communications Systems

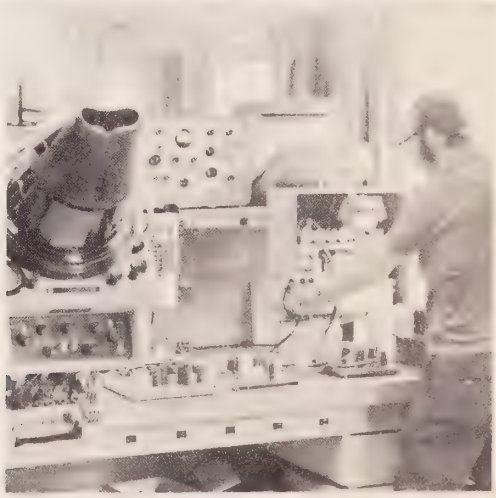
Ship-shore communications is available through forty-eight marine radio (coast) stations located on the East and West Coasts, along the St. Lawrence River and the Great Lakes as well as in the Northern areas of Canada. Canada is committed by international agreement to arrange for coast watching and the rescue of per-



Technician Michel Bernard, testing microwave link for the Quebec Harbour Radar.



Victoria ship electronic workshop technicians working aboard CCGS Quadra, on the Decca 2400 (s band) radar.



Bernard Besson, electronic technician adjusting the Kelvin Hughes 14/12 radar in Quebec S.E.W.

sons in distress at sea within its coastal areas, and the prime function of the marine radio station is to provide a ship-shore communications safety service. The radio operators maintain a twenty-four hour a day listening watch on the radio-telephone and/or radio-telegraph international link between shipping and the governmental agencies responsible for carrying out the search and rescue operations.

In addition, these stations provide regular short, medium and long range communications for ships by a radio-telegraph message service and are capable, through their radiotelephone installations, of connecting a ship station directly into the inland telephone network. Another safety function is the transmission by radio on a scheduled broadcast basis of weather forecasts and notices to shipping concerning the status of marine navigational facilities and potential dangers to navigation.

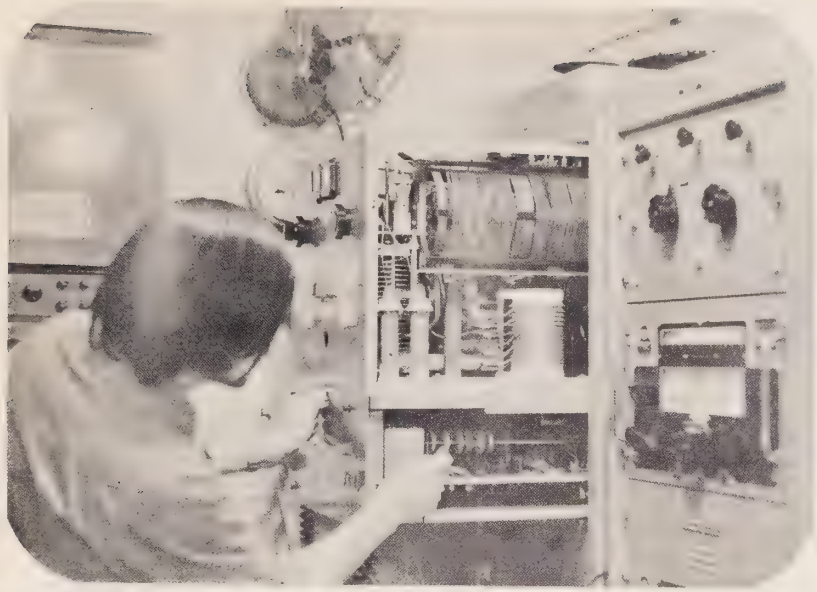
Radio aids to Navigation (Guidance Systems)

The primary objective of marine radio aids to navigation is to support the safe movement of vessels from point of departure to point of arrival. They are designed to provide a position fixing capability unlimited by darkness, cloud cover, wind, sea state and visibility. In addition, these systems reduce the possibility of vessel-to-vessel collision by supporting anti-collision procedures such as traffic separation schemes and advisory data regarding the movement of vessels in restricted waters. The responsibilities of the guidance group in many areas parallel those of other sections in the provision of professional and technical services, consultation and advice on matters concerning telecommunication and electronic systems. Follow-up services are provided by competent technical specialists at the system sites.

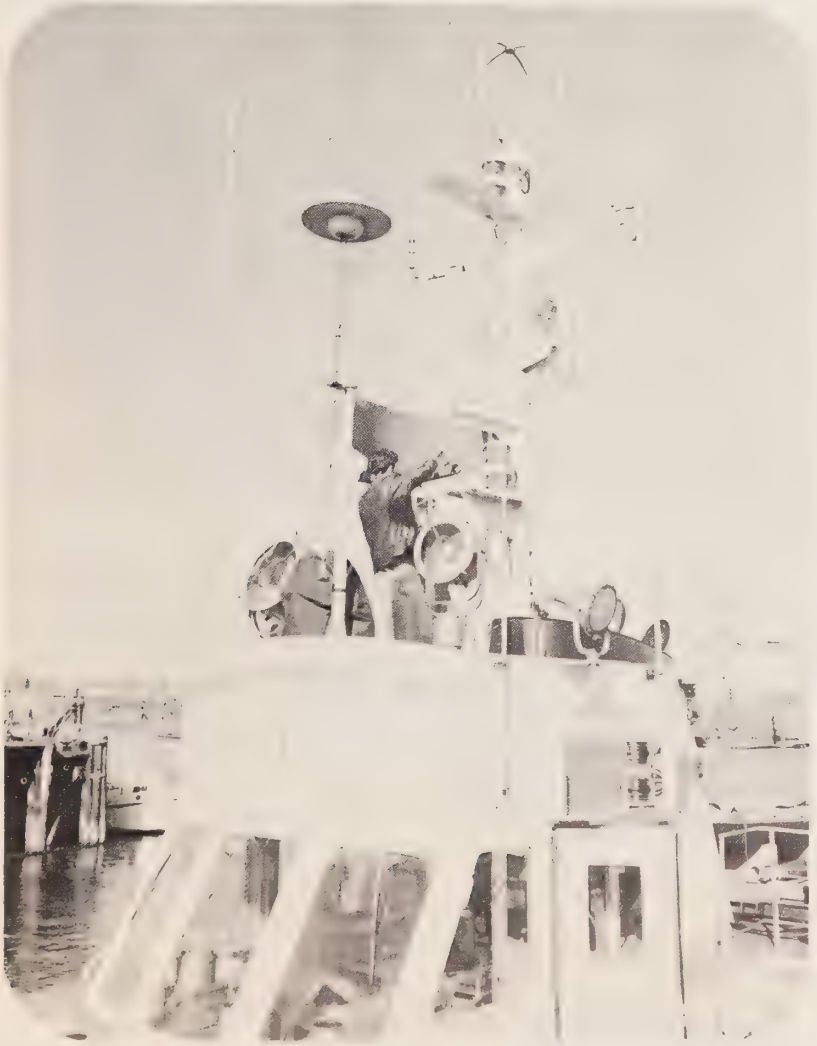
Some of the more recent activities include a new Loran A station, established at Gray Point on the Queen Charlotte Islands of British Columbia. This installation completes Loran A. Coverage on the western seaboard of Canada and the United States. Another significant recent acquisition is a precise range positioning system for icebreakers and sweeping and survey vessels, which consists of computer controller equipment recording a vessel's movements from information provided by strategically located shore based transponders, similar to those providing tracking aids to most of the major missile and well known APOLLO flights. On a vessel this navigation information is presented in the form of a computer-drawn map on a television-like display, allowing the captain to instantly locate his position in the channel, by following a small bright dot of light that traces his progress.

Computer and Regulations Groups

The computer group is responsible for the review of Marine requirements for automated systems, the design, maintenance, and operational programs for computers in systems, and implementation computer programming and its associated hardware. The regulatory group is responsible for all regulatory aspects of electronic equipment as governed by the Canada Shipping Act.



Fine adjustments are made on the Globespan transmitter in the radio room of the CCGS Simon Fraser.



Victoria SEW technician working on CCGS RIDER

Joint Enroute Terminal System

Canada's air traffic controllers will soon be operating "JETS". When ATC first began, the controller could talk to a radio operator by telephone, wait for him to contact the pilot, and still receive the answer in time to act. As the speed and density of traffic increased, delays became intolerable and the controller was provided with his own radio equipment to permit direct contact with the pilot. While this was sufficient for control of most aircraft, increasing congestion at major airports dictated the need for controllers to know the positions of all aircraft at all times. The need was met by installing radar at those locations.

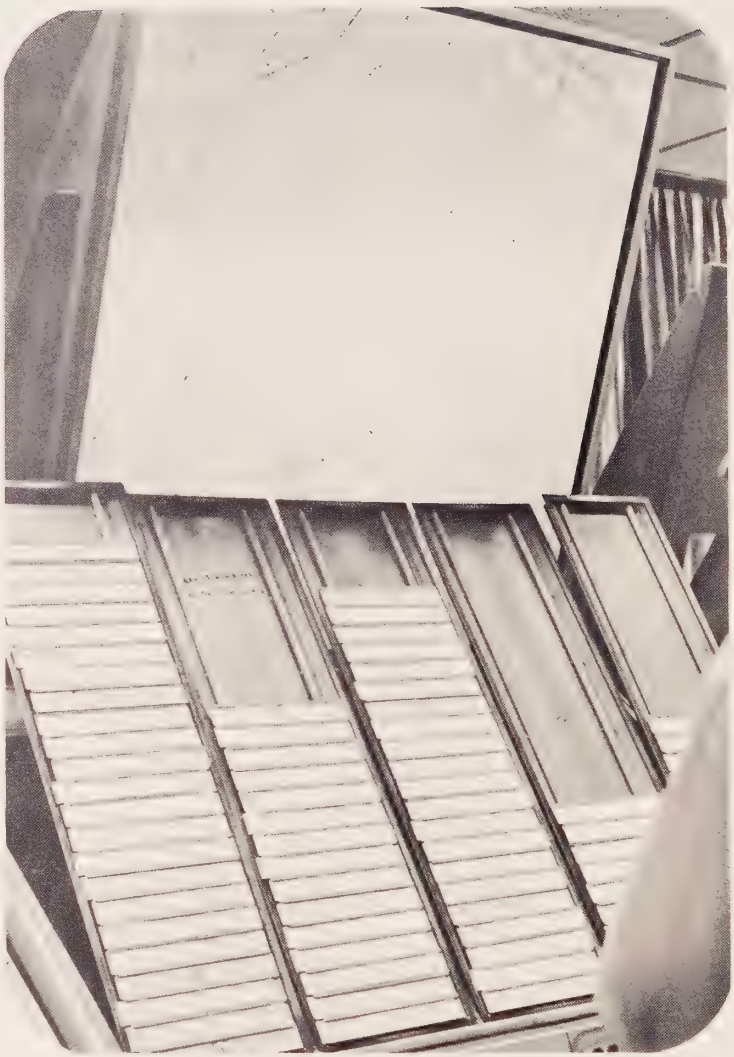
This is the Canadian Air Traffic Control System as it exists today.

Forecasts of future traffic density indicate that controllers will soon require even more information at their fingertips. It is also apparent that traffic density between airports is growing to the point where radar coverage of all Southern Canada will soon be essential.

To meet this challenge, the Air Traffic Control Branch, in co-operation with the Telecommunications and Electronics Branch, has embarked on a major ATC automation programme.

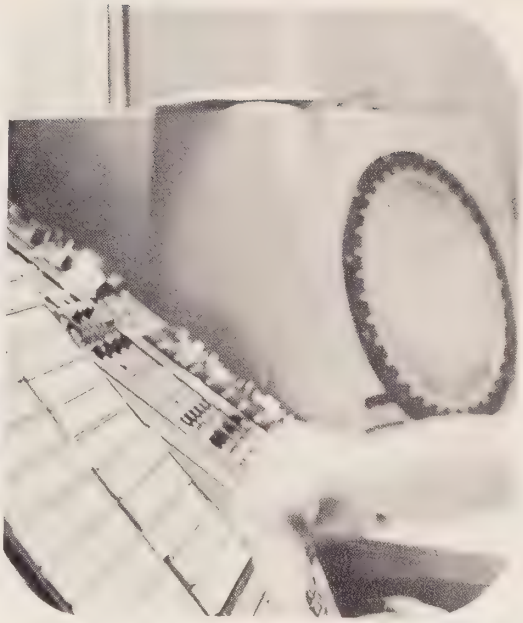
The semi-automated ATC system, known as JETS — for Joint Enroute Terminal System — is planned as a three-stage programme, with each stage providing an operational system which will be a building block for the subsequent stage. Implementation of all three stages will solve most of the major problems facing ATC in the foreseeable future.

JETS will enable the transfer of



Non radar control sector, J.E.T.S. will provide radar coverage for sectors as shown and speed traffic flow.







Moncton Air Traffice Control Centre, showing data board and television type radar. To the right of the controllers is the new RDD-1 display.

Moncton control centre using data board in conjunction with RDD-1 for control of trans-atlantic flights.

RDD-1 display as seen by the air traffic controller, showing aircraft and airways maps.

radar surveillance information from distant radar sites, over telephone lines, to major Air Traffic Control Centres as shown in the simplified JETS block diagram.

At the Centres, this data will be processed and correlated with flight plans by high speed electronic digital computers. The processed and filtered data will then be passed to the controller's displays, each of which will be completely independent to ensure the greatest possible degree of versatility. To further increase versatility, JETS is being designed as a basic system, with provisions for further automation as required.

In the late 1960's a laboratory prototype of an automated radar data processing system was installed at the Telecommunications Systems Laboratory, Ottawa, and underwent extensive evaluation, which led to the design of the RDD-1 (Radar Digitizing and Display System) at present in operation at the Moncton Area Control Centre.

The full JETS is based on using the best features of RDD-1, a study by the University of Waterloo, previous experience with the Gander Automated Air Traffic System and the United States ARTS (Automated Radar Terminal System) and NAS (National Airspace System) programmes.

Basic design objectives of JETS include increasing controller productivity by eliminating some routine tasks, thus allowing more time to be devoted to the decision-making process; improving the ease and speed of maintenance, and simplifying equipment operations and training. The net result will be more effective use of airspace, and improved safety and efficiency. Special emphasis is being placed on high reliability and failsafe design.

The controller using JETS will have all essential control information available at the push of a button. By use of his display and associated display processor he will be able to see all aircraft of interest but not have the display cluttered with flights under the jurisdiction of other controllers. Alongside each target he will be able to display the flight number, speed, altitude and certain other information.

Several other countries are working toward similar systems, and JETS will be one of the first large-scale integrated systems. JETS will process information from radars covering most of Southern Canada and parts of the Northern United States.

Detailed planning is in progress for installation of a development model in Ottawa, which will be used to determine the optimum system.

Operating personnel from across Canada will be invited to assist in this evaluation process, and suggestions and requirements from field personnel are being actively solicited.

Each region is already represented on the JETS Project team, and it is expected that preliminary training for both ATC and T&E field staff will commence in the near future.

Since jets will be one of the largest and most advanced projects undertaken by the Ministry, there are ample opportunities for interested ATC and T&E personnel to become involved in the programme, and to be trained in the operation and maintenance of a sophisticated data processing and display system.

suggestion awards

primes à l'initiative



R. Michael McDonald, receives his award from Dr. Pierre Camu, Administrator, Canadian Marine Administration, with Mrs. McDonald looking on.

M. Michael McDonald reçoit sa prime des mains de M. Pierre Camu, administrateur des transports maritimes. Mme McDonald, à droite, regarde M. Pierre Camu.

"Bonus Thoughts", $2,745 worth, goes to Ministry of Transport St. Lawrence Ship Channel Division Officer, Montreal, R. Michael McDonald for designing and building a device which provides continuous recording of river bottom contours.

Mr. McDonald's invention is a major improvement in terms of efficiency and accuracy, over the former method of recording channel changes and the detection of boulders, sandbars, and other obstacles on the bottom of shipping channels. The device is now in regular use on six Coast Guard channel survey vessels operating along the St. Lawrence Seaway and on the Saguenay River.

The award, the largest within the Ministry of Transport since the inception of the program in 1952, was presented by Dr. Pierre Camu, Administrator, Canadian Marine Administration.

M. R. Michael McDonald, agent de la Division du chenal navigable du Saint-Laurent, ministère des Transports à Montréal a obtenu une prime de $2 475 pour le récompenser d'avoir conçu et réalisé un dispositif qui enregistre en permanence des données sur le profil du lit du fleuve.

L'invention de M. McDonald constitue un amélioration sensible du point de vue efficacité et précision par rapport à l'ancienne méthode qui était utilisée pour enregistrer les modifications du chenal et déceler les blocs de pierre, les ensablements et autres obstacles se trouvant au fond des chenaux navigables. Ce dispositif est désormais utilisé régulièrement par six navires garde côtière qui sillonnent la voie maritime du Saint-Laurent et le Saguenay, et sont chargés de la surveillance des chenaux.

M. McDonald a reçu la prime des mains de M. Pierre Camu, administrateur des transports maritimes. C'est la plus élévée qui ait été décernée au ministère des Transports depuis la mise en application de ce programme en 1962.

suggestion awards (cont'd.)

James K. Sweeney, Downsview, Ontario. $540. Suggested the installation of back-up freezestats in Air Handling Units in order to discontinue present method of frostproofing the cooling coils by draining and adding Glycol every fall and flushing and filling every spring.

Alex Allen Ewanchuk, Whitehorse Yukon. $340.

Nicholas Allwork and J. Napoleon Roy, Montreal, Quebec. $150. Joint suggestion award.

Ronald Tughan, Ottawa, Ontario.$150.

Joseph Remy Vachon, Chateauguay, Quebec. $125.

Augustus Crewe and Louis S. Trzop, Halifax, Nova Scotia. $130. Joint suggestion award.

J. Gilbert Ross, Laval, Quebec. $125.

David H. Gainforth, Brampton, Ontario. $125.

John Douglas Kiloh, Regina, Saskatchewan. $40.

Joseph Roger Pilon, Montreal, Quebec. $40.

Jan C.M. Vandernagel, Winnipeg Manitoba. $25.

Tomomi Saka, Calgary, Alberta. $50.

Fred W. Radtke, Calgary, Alberta. $40.

Phillip Pawlivsky, Grande Prairie, Alberta. $80.

F.A. Van der Zande, North Battleford, Saskatchewan. $50.

primes à l'initiative (suite)

James K. Sweeney, Downsview (Ontario); $540. A proposé d'installer des frigostats auxiliaires sur certains appareils des Services de l'air et d'abandonner ainsi la pratique qui consiste à vidanger les serpentins de refroidissement à chaque automne pour les remplir de Glycol jusqu'au printemps.

William Fernuik, Saskatoon, Saskatchewan. $30.

David W.G. Thorne, Sept. Iles, Quebec. $90.

Charles Kislig, Belfountain, Ontario. Winner of two awards totalling $265.

John Robert Rennie, Montreal, Quebec. $100.

William Richard Philps, Port Hardy, B.C. $125.

Rein Andresen, Kenora, Ontario. $90.

Charles Ellis Hearn, Winnipeg, Manitoba. $60.

John Nelson Bell, Prince George, B.C. $90.

Terry Mains, Saskatoon, Sask. $70.

Zoltan Tallian, Ottawa, Ontario. $40.

Murray Graham, Sault Ste. Marie, Ontario. $50.

Terry Joseph Michaud, Ottawa, Ontario. $20.

Paul Myron Munsicker, Garson, Ontario. $40.

Albert Joseph Lemoine, Winnipeg, Manitoba. $240.

Otto J.K. Schilling, Saskatoon, Sask. $30.

suggestion awards (cont'd.)

Osman F. Ucar, London, Ontario. $90.

Heikki Vaisanen, Ottawa, Ontario. $40.

Sydney S. Buckley, Thompson, Manitoba. $30.

Barry Robert Hastings, Richmond, B.C. $50.

A.B. Conners, Ottawa, Ontario. $30.

James Moreton, Spring Island Loran, Kyuquot, B.C. $20.

Pierre Guinness, Vancouver, B.C. $50.

Robert C. Harris, Ottawa, Ontario. $90.

David Earl Radtke, Yellowknife, N.W.T. $75.

John D. MacLeod, Kamloops, British Columbia. $30.

Bruce Waine, Alert Bay, British Columbia. $30.

William L. McSheffrey, Ottawa, Ontario. $90.

Kenneth H. Jacobsen, Williams Lake, British Columbia. $50.

Catherine Ann Tiberi, Ottawa, Ontario. $40.

Carle B. Iderstine, West Riverview, New Brunswick. $50.

Joseph Maxwell, Sault Ste. Marie, Ontario. $40.

Jean Robillard, Victoria, British Columbia. $125.

Russell G. Awde, Aurora, Ontario. $180.

primes à l'initiative (suite)

Terrence R. Gorsuch, Williams Lake, British Columbia. $100.

Harvey S. Slaunwhite, Dartmouth, Nova Scotia. $30.

Williard E. Cousins, Ottawa, Ontario. $20.

John A. Weir, Coxheath, Nova Scotia. $35.

Richard Robb, St. Boniface, Manitoba. $40.

James Arthur Hill, Prince George, B.C. $200.

Reginald T. Cavanagh, Victoria, B.C. $20.

Gerald N. Peters, Victoria, B.C. $50.

Peter M. Dawson, Prince Rupert, B.C. $25.

Richard B. Maguire, Winnipeg, Manitoba. $20.

William Richard Philps, Port Hardy, B.C. $125.

Morgan J.W. Upton, Downsview, Ontario. $40.

G.L. Hoy, Fort Nelson, B.C. $20.

Robert Keith Taylor, Oakville, Ontario. $50.

Leopold Lamarre, Ville de Longueuil, Quebec. $50.

(Mrs.) Gilberthe H. Mathe, Wilson's Corners, Quebec. $200.

Bruce Brenot, Ottawa, Ontario. $40.

Victor H. McPherson, Agincourt, Ontario. $35.

Retirements
à la Retraite

From medical student and a varied life, Emery Duncan Lalonde has retired from the Ministry of Transport headquarters Construction Engineering and Architectural Branch (Air Services) after 35 years of service. Emery joined MOT as Airways Electrician, installing lighting aids to navigation in the Central Airways District August 17, 1937.

Après 35 ans de service, M. Emery Duncan Lalonde qui a été étudiant en médecine et a mené une vie fertile en péripéties, quitte la Direction de l'architecture et du génie civil (services de l'air) de l'Administration centrale du ministère des Transports pour partir en retraite. M. Duncan a débuté le 17 août 1937 au ministère des Transports comme électricien des voies aériennes. Il était alors chargé d'installer des aides lumineuses à la navigation dans le "district des voies aériennes du Centre".



Douglas Lane, Regional Administrator Central Region (Air), presents Emery Duncan Lalonde, and Mrs. Lalonde, with his long service certificate.

M. Emery Duncan et sa femme reçoivent des mains de M. Douglas Lan administrateur de la région centrale (Air) un certificat de long service.

Girl Friday for 31 years, Miss Agnes L. Lorimer, secretary to the Regional Administrator, Western Region Office of CATA, has retired. Agnes served with such men who guided the region as G.E. McDowell, H.J. Williamson, T.D. How, and J.R.K. Main.

Mlle Agnès L. Lorimer, secrétaire polyvalente de l'administrateur régional pendant 31 ans (bureau de la région ouest de l'ACTA) part en retraite.

Mlle Lorimer a été au service d'administrateurs régionaux comme M. G.E. McDowell, M. H.J. Williamson, M. T.D. How et M. J.R.K. Main.



Don J. Dewar, Regional Administrator, Western Air Administration, presents Agnes with gifts and her long service certificate.

On voit sur la photo Mlle Lorimer recevant des mains de M. Don J. Dewar, administrateur régional (administration des transports aériens, région de l'ouest) des cadeaux et un certificat de long service.

Retirements
à la Retraite

From junior radio operator to Superintendant International and Interdepartmental Relations Section of the newly organized Co-Ordination Services Division, closes out the career of 32 years with the Ministry of Transport for Clarke Stewart.

M. Clarke Stewart prend sa retraite après avoir été à l'emploi du ministère des Transports pendant 32 ans. Ayant débuté comme opérateur radio, il occupait à la fin de sa carrière le poste de Surintendant de la section des relations internationales et interministérielles de la nouvelle division des services de coordination.



Clarke receives his long service certificate from E.F. Porter, Director Telecommunications and Electronics, Mrs. Stewart is on the left.

Clarke, en compagnie de son épouse, reçoit son certificat de longs services des mains de M. E.F. Porter, Directeur des télécommunications et de l'électronique.



Ken, with his wife, admires the engraved watch given to him by his many friends and associates in the Ministry.

Sur la photo, M. Weldon regarde, en compagnie de sa femme, la jolie montre gravée que lui ont offert ses nombreux amis et collègues du Ministère.

Ken Weldon has retired from the Ministry of Transport after 32 years service. He concluded a colourful career in September, 1972, while holding the position of Administrative Officer, Office Services, at Ministry Headquarters.

Après 32 ans de service au ministère des Transports, M. Ken Weldon a pris sa retraite en septembre 1972. A la fin de sa brillante carrière, il occupait le poste d'administrateur et était rattaché aux Services de l'immeuble à Ottawa.

People in the News

Ceux qui ont fait les manchettes



The Ministry of Transport Marine display won two consecutive awards, first in Lunenburg at the Fisheries Exhibition in July, and then the Grand Prize at the Halifax Atlantic Winter Fair in October. The display was designed and constructed at the Telecom and Electronics Systems Laboratory, Uplands, Ottawa. It consists of four electronic maps depicting Communications, Navaids, Administration, and the Aid to Search and Rescue. The Display attracted over 120,000 visitors.

Le stand de l'Administration des transports maritimes du Ministère a obtenu deux prix consécutifs. Le premier lui a été décerné en juillet à Lunenburg au cours de l'exposition sur la pêche et le second est le Grand prix de la "Halifax Atlantic Winter Fair" (foire d'hiver de Halifax), obtenu en octobre. Les nouveautés exposées ont été conçues et réalisés au laboratoire des "systèmes" électroniques et de télécommunications de la base d'Uplands à Ottawa. Il s'agit de quatre cartes électroniques représentant les circuits de télécommunications, les aides à la navigation, l'administration et le matériel utilisé dans les opérations de recherche et de sauvetage. Ce stand a attiré plus de 120,000 visiteurs.



Above, Frank Weston, Regional Director Marine Services for the Maritime Region, receives the Grand Prize Award from Robert Asprey, Manager of the Halifax Board of Trade, and Mr. and Mrs. Weston, with the Grand Prize Award for the winning display.

On peut voir ci-dessus, M. Frank Weston, directeur régional des services de la marine pour les Maritimes, recevant le Grand prix des mains de M. Robert Asprey, directeur de la chambre de commerce d'Halifax et M. et Mme Weston présentant la suprême récompense.

People in the News

Ceux qui ont fait les manchettes

The seventh Senior Air Administration Management Committee meeting with Regional Administrators and Headquarters Branch Directors, was held December 4, 5 and 6, Place de Ville Tower "C" Ottawa.

La septième rencontre du Comité principal de gestion de l'administration de l'air réunissant les Administrateurs régionaux et les Directeurs de l'administration centrale a eu lieu les 4, 5 et 6 décembre à la Tour C, Place de Ville, Ottawa.



W.H. Huck, Administrator, Air Transportation Administration, chaired the 3-day meeting, which dealt with budgeting resource allocation proposals and critical issues, related to submission of five year plans.

M.W.H. Huck, administrateur des transports aériens, a présidé cette rencontre de trois jours qui a porté sur les propositions concernant l'affectation des crédits budgétaires et certains autres problèmes, en fonction de la présentation des plans quinquennaux.



Mr. and Mrs. M.G. Hagglund were honored at a luncheon to mark Mel's promotion from the position of Regional Administrator, Central Region, Canadian Air transportation Administration, to Administrator of the Arctic Transportation Agency, Ottawa.

Un dîner a été organisé en l'honneur de M. et de Mme M.G. Hagglund afin de marquer le départ de M. Hagglund qui quitte son poste d'administrateur des transports aériens (région du centre) pour celui d'administrateur de l'Agence des transports dans l'Agence des transports dans l'Arctique à Ottawa.

lr. Hagglund, centre, receives one of the many fts presented to him by Mr. Carty, on behalf his associates. Mrs. Hagglund is on the left.

M. Hagglund (au centre) reçoit des mains de M. Carty un des nombreux cadeaux offerts par ses collègues. Mme Hagglund se trouve à gauche de M. Carty.

Canadian Port and Harbour Association



The fourteenth annual meeting of the Canadian Port and Harbour Association was held in Hamilton, Ont. September 11-13, 1972. Shown is the new executive of the Association. From left to right, they are:

G.C. Mouland, Director, National Harbours Board, Saint John, N.B.,
E.M. Perkins, Director, Hamilton Harbour Commissioners;
K. McCuaig, Past President, Lakehead Harbour Commission;
J.H.W. Cavey, President, Ministry of Transport, Ottawa;
K.F. Fraser, Vice-President, North Fraser Harbour Commissioners;
W.B. Rest, Director, Toronto Harbour Commissioners;
J.B. Blake, Director, Port Alberni Harbour Commissioners;
I.C.R. Brown, Secretary-Treasurer, Toronto Harbour Commissioners.

La quatorzième conférence annuelle de l'Association des ports canadiens s'est tenue du 11 au 13 septembre 1972 à Hamilton. On peut voir sur la photo, le nouveau conseil d'administration de l'Association qui se compose (de gauche à droite) de:

M. G.C. Mouland, directeur du Conseil des ports nationaux (Saint-Jean, Nouveau-Brunswick)
M. E.M. Perkins, directeur (commissaires de ports de Hamilton)
M. K. McCuaig ancien président de la commission du port de Lakehead
M. J.H.W. Cavey, président de l'Association (ministère des Transports à Ottawa)
M. K.F. Fraser, vice président (commissaires du port de North Fraser)
M. W.B. Rest, directeur (Commissaires du port de Toronto)
M. J.B. Blake, directeur (commissaires du port de Port Alberni)
M. I.C.R. Brown, secrétaire-trésorier (commissaire du port de Toronto)

Employee Suggestion

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VOS TROUVAILLES, C'EST DE L'ARGENT

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(See reverse side – Voir au verso)

Signature Date

NAME AND ADDRESS

NOM ET ADRESSE

CLASSIFICATION
BRANCH – DIRECTION
LOCATION – LIEU
REGION – RÉGION
S.I.N. No. – N.A.S

HOW TO IMPROVE YOUR SUGGESTION

IDENTIFY THE PROBLEM.

Obtain the facts.

Write it out in detail. (If it is a modification to equipment, use the format in maintenance manuals if possible.)

Provide a sketch or drawing.

Estimate savings:
e.g.,How long does job take with present method? How long with your proposed method?

Provide photographs, if applicable.

Enclose samples of forms.

Send your suggestion to:

Co-Ordinator,
Suggestion Award Program,
Ministry of Tranport,
Ottawa, Ont.

K1A ON8 (Air)
K1A ON7 (Marine)
K1A ON5 (Administration)

Eligibility and awards in accordance with Incentive Award Board Regulations.

COMMENT MIEUX PRESENTER VOS SUGGESTIONS

IDENTIFIEZ LE PROBLEME.

Réunissez les faits.

Mettez-les par écrit et donnez des détails. (S'il s'agit d'un changement à apporter à une pièce d'équipement, utilisez la formulation des manuels d'entretien si possible)

Annexez un croquis ou un dessin.

Evaluez les économies possibles:
ex.Combien de temps faut-il pour effectuer le travail avec la méthode actuelle? Combien de temps faudra-t-il avec votre méthode?

Annexez des photos, s'il y a lieu.

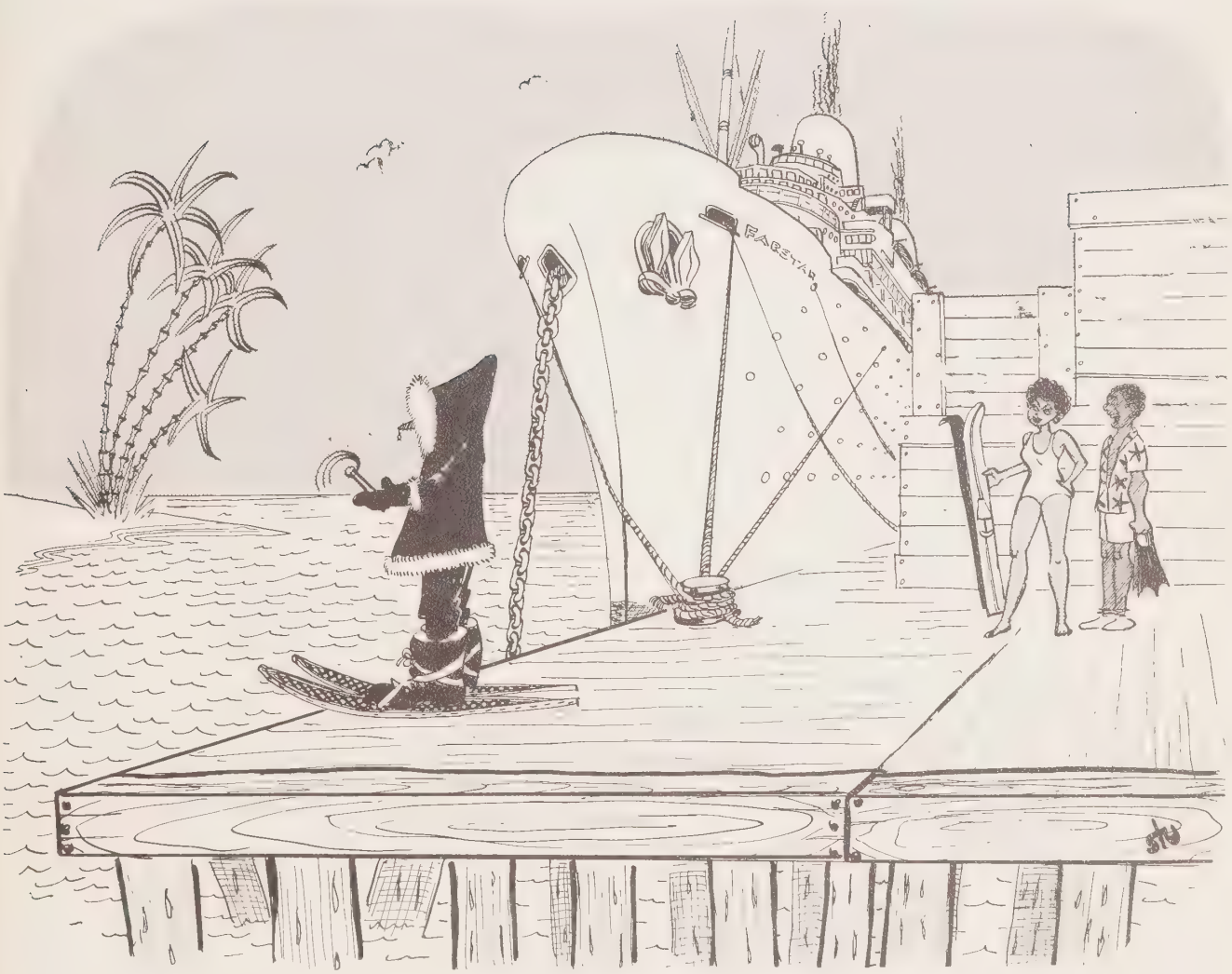
Joignez des exemplaires des formules.

Envoyez vos suggestions au:

Coordonnateur
Programme des primes à l'initiative
Ministère des Transports
Ottawa (Ontario)

K1A ON8 (Air)
K1A ON7 (Marine)
K1A ON5 (Administration)

L'admissibilité et les primes sont établies en vertu du règlement du comité des primes à l'initiative.



"It's traditional Canadian working costume".



TRANSPORT CANADA

march-april 1973 mars-avril

91 T 15
T 61

MAY 16 1973



contents ~ sommaire

Title Page — Page des titres 1

Transport Council — Conseil des transports 2

Transportation Council Message — Message du conseil des transports 3

Safety Car Demonstration 4

Voiture de Sécurité 6

Shangri-La 8

La Patrie des Marins a son Musée Maritime 12

Chebucto Head 16

Penguin Island 21

C.C.G. Research 23

People in the News — Ceux qui ont fait les manchettes 27

Suggestion Awards — Primes à l'initiative 29

Retirements — à la retraite 31

National Ports Council — Conseil des ports nationaux 32

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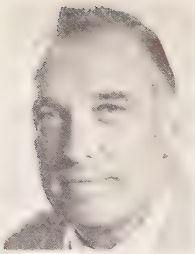
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transport canada



E.J. Benson



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Hon. J. Marchand



G.A. Scott



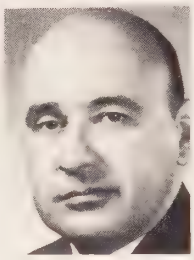
M.D. Armstrong



J. Guay



W.H. Huck



Pierre Camu



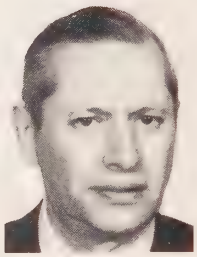
J.Y. Clarke

transportation council

conseil des transports



C. Carriere



I.C. Cornblatt



W.M. Gilchrist



Mel Hagglund



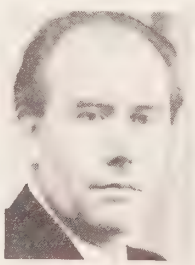
Del Taylor



Robert Turner



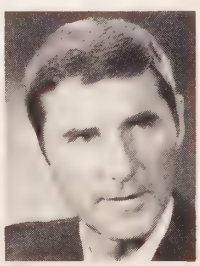
W.F. Nelson



C.C. Halton



John Gray



Andre Laframboise

transportation council message



Roy Illing

message du conseil des transports

The speech from the throne at the opening of the current session of Parliament indicated the government's intention of holding a series of federal/provincial conferences related to economic development and transportation matters.

Focusing on these two areas has highlighted the strong interface between economic development and transportation. If Canada is to realize its full potential for economic, industrial and resource development it is essential that all modes of transportation be harnessed to support economic objectives. In some cases this will mean harnessing elements of our existing transportation infrastructure. In other cases it will mean the development of new transportation infrastructure to serve economic aims. In either case it is imperative that there be efficient planning and efficient utilization of transportation resources.

The challenges of the future demand of us that we all think in intermodal terms, looking for development of the most efficient means of movement whether it be the mode that we are directly associated with or not.

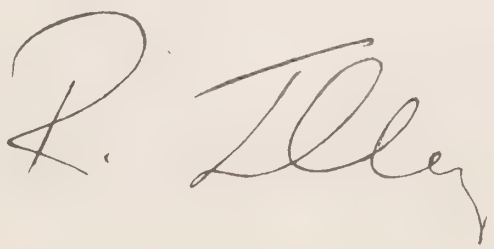
Consequently the demand for cooperation between all elements of the Ministry is as high as it has ever been. Equally important is the need to be aware of what other elements of the federal and provincial governments which are directly associated with economic development are thinking and doing in order that we may coordinate our efforts with theirs. Perhaps new organizational devices will be developed to ensure that existing cooperative procedures are confirmed and enhanced. The basic responsibility for ensuring that we efficiently and effectively meet the national goals will still rest, however, with each of us individually.

Le discours de Trône présenté au début de la session actuelle du Parlement a indiqué l'intention du gouvernement d'organiser plusieurs conférences fédérales-provinciales sur le développement économique et les transports.

En mettant l'accent sur ces deux domaines, le gouvernement soulignait la relation étroite qui existe entre le développement économique et les transports. Si le Canada veut réaliser pleinement ses possibilités de développement économique, industriel et énergétique, il importe que tous les modes de transport soient mis au service des objectifs économiques visés. Dans certains cas, il faudra développer des secteurs de l'infrastructure actuelle des transports et, dans d'autres, il sera nécessaire de créer une nouvelle infrastructure pour atteindre des objectifs économiques. Dans les deux cas, il est capital qu'il y ait une planification et une utilisation efficaces de nos ressources en matière de transport.

Les défis du futur exigent que nous orientions nos efforts en fonction du transport intermodal en vue de développer les moyens de transport les plus efficaces, qu'il s'agisse ou non des moyens qui nous intéressent directement.

De ce fait, la collaboration entre tous les services du Ministère est plus nécessaire que jamais. Il est aussi important de connaître les projets et les activités des autres organismes fédéraux et provinciaux reliés au développement économique, afin de coordonner nos efforts avec les leurs. Il faudra peut-être élaborer de nouvelles méthodes d'organisation pour assurer le maintien et la consolidation des mécanismes actuels de collaboration. Toutefois, c'est à chacun de nous, considéré individuellement, qu'il incombe de diriger ses efforts vers la réalisation des objectifs nationaux.



safety car DEMONSTRATION

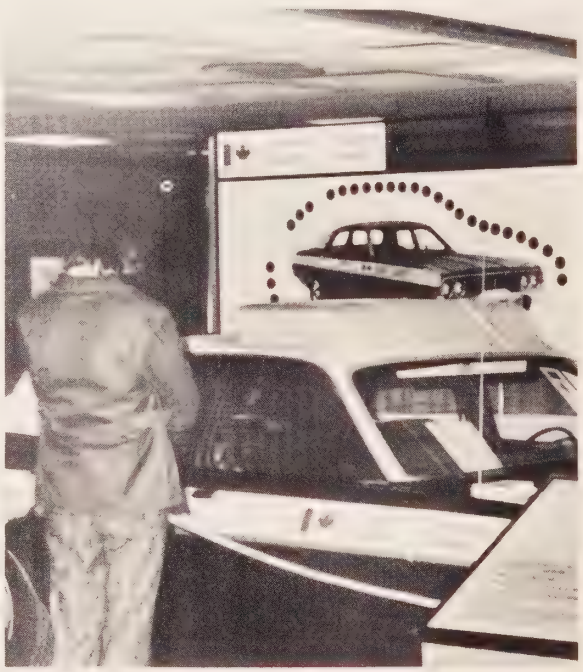
The Road Safety Branch of the Ministry of Transport has produced the special car featured on our front cover. The main "raisons d'etre" for this vehicle are to evaluate the safety potential of various engineering innovations and inform the public of the many safety and exhaust emission devices made mandatory for Canadian motor vehicles under the Motor Vehicle Safety Act.

One of the best ways of evaluating many potential safety features is to fit them to a normal road vehicle and drive it under regular traffic conditions. Usually this type of subjective evaluation must be accompanied by objective measurements. For example, in testing the periscope rearview mirror, it is important to see how it is affected by condensation, rain, snow, accumulation of road dirt, etc., under normal driving. The mirror's main purpose-improved rear vision — must be checked both in practice in traffic and by actual measurements in the laboratory. Tests can disclose blind spots, of which the driver might have been unaware on the road. It is just as important to know what areas cannot be seen as what areas can be seen. Another example of this type of evaluation is the headlamp wiper/washer system. Road tests must be carried out to assess the ability of the system to cope with dirt, ice and snow. Laboratory tests are necessary to measure the decrease in lighting caused by these road conditions. The Prime purpose of the special car is to investigate the practical and safety potential of many engineering items, by a combination of subjective evaluation on the road and objective measurement in the laboratory.

In order to inform the public of current and proposed safety standards, the car will be put on display at various major exhibitions across Canada. It caused considerable public interest at the recent Montreal International Auto Salon, and will be shown again at the Canadian National Exhibition in Toronto this fall. Exhibitions provide a unique opportunity for members of the Branch to discuss details of the car and the Motor Vehicle Safety Act with the public.



Phystester ignition interlock system, to prevent intoxicated drivers from starting their automobiles.



A view of the Ministry's exhibit at the International Auto Show in Montreal. In the background two panels indicate the present standards and possible future safety standards.



Headlamp washing and wiper, which operates simultaneously with windscreen washers and wipers.



The periscope rear vision system to provide a much wider rearward field of view

VOITURE de sécurité



C'est la Direction de la sécurité automobile et routière du ministère des Transports qui a mis au point le véhicule spécial illustré sur notre couverture et dont nous décrivons les caractéristiques dans ce numéro. Ce véhicule vise deux buts: évaluer les avantages que représentent pour la sécurité diverses innovations techniques et renseigner le public sur les nombreux dispositifs de sécurité et de lutte contre la pollution dont les voitures neuves sont dotées, en application de la Loi sur la sécurité des véhicules automobiles.

Une des meilleures façons d'évaluer ces dispositifs de sécurité est de les installer sur un véhicule automobile courant et d'utiliser ce dernier dans des conditions réelles. Ordinairement, cette évaluation subjective doit s'accompagner d'une autre objective. Par exemple, en faisant des essais sur le rétroviseur périscopique, il est important de déterminer comment son efficacité est diminuée par la condensation, la pluie, la neige, l'accumulation de poussière, etc., dans des conditions normales d'utilisation. Il faut vérifier tant sur la route qu'en laboratoire que le rétroviseur périscopique remplit bien sa fonction principale, celle d'améliorer la visibilité arrière. Les essais peuvent révéler des angles morts que le conducteur sur la route n'a pu déceler. Un autre exemple de ce genre d'évaluation porte sur le système d'essuie-phare et de lave-phare des projecteurs.

Il faut entreprendre des essais routiers pour déterminer dans quelle mesure ce système élimine la saleté, la glace et la neige, et les essais en laboratoire pour évaluer la diminution de l'intensité lumineuse occasionnée par les conditions de la route. Le but principal de ce véhicule spécial est donc de déterminer le surcroît de sécurité qu'assurent les nouvelles caractéristiques techniques, au moyen d'une évaluation subjective sur la route et d'une évaluation objective en laboratoire.

Afin de renseigner le public sur les normes de sécurité actuelles et projetées, le véhicule sera présenté dans différentes grandes expositions au Canada. Présent au dernier Salon international de l'auto de Montréal où il a suscité un vif intérêt, il doit être présenté à l'Exposition nationale du Canada à Toronto cet automne. Les expositions offrent aux membres de la Direction une occasion unique de discuter avec le public des caractéristiques techniques du véhicule ainsi que des dispositions de la Loi sur la sécurité des véhicules automobiles.



Parmi les dispositifs de sécurité les plus notoires, mentionnons le rétroviseur périscopique, des phares à trois niveaux d'éclairage et le système de lave-phares.

Le véhicule sécuritaire expérimental que l'on verra à l'épreuve sur nos routes au cours des prochains mois.



SHANGRI-LA

By Ken Richardson
Area Information Officer C.I.D.A.

Shangri-La is no paradise; it is actually a chilly mountain pass near Mount Everest. And in Nepal, once known as the Forbidden Kingdom, Canadian aircraft and aviation experts are now helping in an effort to overcome one of the world's difficult transportation and communication problems.

All countries are unique, but Nepal is more unique than most.

A remote, landlocked kingdom about one-fifth the size of Alberta, Nepal stretches for five hundred miles from East to West and separates India from the Plateau of Tibet. Its borders enclose eight of earth's ten highest mountains, and about 11.5 million people. The land varies from a narrow band of swamps and jungle along the southern border, where in some areas lush cereal and citrus crops grow in a tropical climate, through the Middle Hills region and its many fertile valleys where most Nepalese live, to the dizzying peaks of the Himalayan Range.

To survive in their rugged surroundings, Nepalese must use every possible square foot of the rocky soil. On painstakingly terraced mountain land, farmers grow rice (at world-record elevations of up to 9,000 feet) and a variety of other cereal and vegetable crops, or raise chickens and livestock. Ingenuity stretches the available resources: winter barnyards become summer vegetable gardens, the flat roofs of dwellings serve as work platforms, and sheep and goats do double-duty by carrying small packs of salt, herbs, grain or other commodities over mountains to markets and trading centres. The present precarious economy, yielding mountain dwellers only a meagre subsistence, depends on a constant flow of people, animals and goods. But on mountain trails travel is painfully slow, even for Sherpa porters. Wheeled vehicles are unknown because they are useless. National progress and economic development call for better forms of transportation, to knit the isolated, alpine valleys together and speed the exchange of goods and of ideas.

Air links planned

Roads are being built, with help from China, India, Britain, Russia and the United States, but prohibitive construction costs make it uneconomic to service many remote areas. As a practical alternative, Nepal is now carrying out a major program — with the cooperation of the Asian Development Bank and Canada — to develop a network of air links between centres of settlement.

Canada is playing a star role in this aviation program because Canadian STOL (short take-off and landing) aircraft are well suited to Nepal's terrain and require minimal investment in facilities. They can thread through mountain passes, reach isolated communities in minutes rather than weeks, and set down on short landing strips prepared in the confined valleys.

The drive to open up Nepal's hinterland was launched in 1959 by the late King Mahendra. Seven STOL airstrips are now operating, with 23 more being improved or developed. Two twin-Otters fly daily from Kathmandu to interior settlements.

"They are economical and have been very successful", says Dr. Bhekh B. Thapa, a native of Nepal and vice-president for overseas operations of the Ottawa-based International Development Research Centre. "Already the two aircraft simply cannot meet the demand and there has been difficulty controlling the large number of people wanting to get aboard. The STOL operations are ideally suited for a country like ours since there are no major construction requirements, other than limited preparation of ground sites in the areas selected for landings. There is no doubt that this type of operation will be

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Twin Otter, a Canadian STOL type aircraft, threads its way through the dizzying peaks of the Himalayan Range.

"Flight Time". Skilled Nepalese pilots, and Canadian aircraft, are ideally suited for STOL-type landing strips like this one at Lukla, and have combined to form part of a successful aviation development program in Nepal.

invaluable in helping development of our country's economy, particularly in the field of tourism".

Canadian experts

The twin-Otters and spare parts were provided through a $1.2 million CIDA development loan. Built by De Havilland Aircraft of Canada at Toronto, the 20-passenger, 230 m.p.h., 1000-mile-range aircraft have "excellent short-field performance and good flying characteristics essential in the diverse and rapidly-changing flying conditions in Nepal", says Donald S. Blaine, CIDA project officer and former RCAF air commodore. A technical assistance grant was also provided, to make available a pilot instructor, an air engineer and a ground-school instructor from De Havilland. They started a training program in Nepal late in 1971. The United Nations — through its resident representative in Nepal, Dr. Jacob Joury — made available the services of Captain Hardy Fuerer, a Swiss pilot experienced in mountain flying in Nepal. Capt. Fuerer, on assignment in Nepal for the United Nations Development Program received four weeks of orientation at De Havilland's Downsview, Ontario, base under CIDA sponsorship.

Two Canadian aviation experts have also contributed to the progress of air transport in Nepal while working with multi-lateral organizations. The initial feasibility study was carried out by the International Civil Aviation Organization (ICAO) under the auspices of the Asian Development Bank. George Lothian — on of Air Canada's original pilots, its chief pilot for several years, and a former Canadian chief delegate to ICAO — had been assigned to Nepal as ICAO representative. He became one of the architects of the plan for aviation development, and today is helping Nepal to carry out that plan.

The obstacle of limited financial resources was largely overcome by bilateral aid from several countries and a $6.36 million loan from the Asian Development Bank to provide expert advisers and finance airport facilities, including new all-weather navigational equipment and maintenance shops. One of the advisers is Henri Goudreau of Montreal, a World War II pilot who served for many years as a senior officer in Canada's Ministry of Transport and also a former Canadian delegate to ICAO. As liaison officer between the ADB and the Nepal Government, coordinating the development of domestic airports, he can draw on pioneer aviation experience in hewing out airports in Northern Quebec, Newfoundland and on Baffin Island.

5 Airports needed

Mr. Goudreau said, "Our principal objective in Nepal is to build modern airports in the five major valley regions of the country, with the largest of these at Kathmandu". "Other airstrips will serve two purposes. They will enable Nepal, which operates on a subsistence level, to develop its natural resources, and its tourist industry."

In terms of economics, Nepal is one of the world's poorest countries. 95 per cent of the Nepalese people are engaged in agriculture and the gross national product for 1968 was estimated at only $80 per capita. But the country has spectacular beauty, unique culture and customs, and a wealth of exotic places and wildlife to lure visitors (about 40,000 in 1970) — the majestic Annapurna region, the birthplace of the Gautama Buddha at Lumbini; the Ghurka region; tigers and rhinos, pandas and snow leopards; perhaps even the "yeti" or abominable snowman. Besides their regular passengers and cargo, the twin-Otters may some day carry Canadians to Nepal's out-of-the-way interior to learn about an almost unknown way of life in an extraordinary land.



Boarding scene at the community of Tumingtar in the interior of Nepal. Controlling the large number of people wanting to get aboard is very difficult.

Cows share the same real estate as the Twin Otter, (note) airport staff receive their daily instructions.



La patrie des marins a son musée maritime

par Marcel Gignac,
Centre des informations de la marine à Montréal

L'Islet, c'est connu, c'est la patrie des marins. Située à environ cinquante milles de la ville de Québec sur la rive sud, cette pittoresque région peut se vanter d'avoir toujours connu une activité maritime intense. De plus, elle est le lieu de naissance de célèbres capitaines et d'habiles navigateurs. Finalement, elle possède des vestiges historiques maritimes d'une valeur certaine. Que fallait-il de plus pour donner naissance à un musée maritime?

Un peu d'histoire

Le rappel des débuts de ce musée pourrait commencer à la façon d'un conte enfantin. "Il était une fois..." des capitaines, membres de l'Association des marins de la Côte-du-Sud, qui prirent conscience en 1962 de la nécessité d'avoir un lieu de conservation des objets ayant servi à la navigation d'autrefois, objets qu'on retrouvait ici et là dans la région. Et on ferait là d'une pierre deux coups puisqu'on créerait ainsi un centre d'attractions touristiques

! Avoir une idée et la traduire dans la réalité, voilà deux choses fort différentes! D'abord, et Monsieur de la Palice n'aurait pas dit mieux, il faut de l'argent. En deuxième lieu, il faut mettre la main sur un local convenable à cette fin.

La persévérance de ces marins devait triompher de ces difficultés. Les soirées récréatives et une aide financière du



Le conservateur du musée, le capitaine Joseph-Albert Brisebois, faisait ici l'essai d'un appareil de radiotéléphone installé à bord du Marmot, barge de la Garde côtière canadienne. Au cours de sa carrière, le capitaine Brisebois a travaillé pour le ministère des Transports.



Parmi les 700 pièces exposées au Musée, cette partie de la membrure de la coque du navire de Jacques-Cartier, "La Petite Hermine", retient particulièrement l'attention des visiteurs.



Cette ancre de sept tonnes appartenait à l'*Express of Ireland*, qui a fait naufrage le 29 mai 1914 à Pointe-au-Père, entraînant la mort de 954 personnes

gouvernement québécois règlent en partie le problème du financement. D'autre part, un vieux couvent désaffecté au centre de l'Islet-sur-mer, situé près du fleuve, apparait aux promoteurs du projet comme un magnifique édifice pouvant servir de musée. Et c'est ainsi qu'un musée maritime, unique au Québec, ouvrait ses portes en 1968.

Les Grands

Pour ne pas commettre d'injustices, il conviendrait d'énumérer ici toutes les personnes qui ont joué un rôle dans l'histoire de ce musée. Mais comme cette liste serait longue, nous mentionnerons seulement ceux qui ont travaillé à un moment donné au cours de leur carrière au ministère des Transports. Ce sont M. Willie Douville, un des principaux animateurs de la belle époque de la navigation côtière au Québec, le capitaine Ernest Caron, navigateur de carrière, le capitaine Joseph- Alfred Brisebois, conservateur du musée, et le capitaine Georges-Edouard Gaudreau, président de l'Association des marins de la vallée du Saint-Laurent et ancien Agent de la marine à Québec.

Pourquoi à l'Islet-sur-Mer?

Quiconque connait moindrement l'histoire de cette région comprendra facilement les raisons



La chapelle de l'ancien couvent est devenue l'une des salles du musée. Au fond de cette pièce, on y retrouve une timonerie qui nous donne l'impression d'être vraiment à bord d'un navire.

de ce choix. L'activité maritime de cette région a toujours été fort intense. Durant le régime français, le Saint-Laurent constituait le seul véritable lien entre Québec et les seigneuries de l'endroit. Sous le régime anglais, la région de l'Islet devient un vaste chantier de construction navale où plus de 2000 navires à voiles y auraient vu le jour.

La prospérité de cette industrie navale devait naturellement engendrer plusieurs vocations maritimes telles que celles de matelots,capitaines, officiers, cordiers et gabiers. Cet intérêt à la chose maritime amène le frère Sixtus à mettre sur pied la première Académie de marine de l'Amérique du Nord en 1880 si bien que cinquante ans plus tard, l'Islet comptait plus de 350 marins à l'oeuvre à travers le monde.

Les trésors du musée

Avec un passé maritime aussi fécond, les pièces de musée ne manquaient évidemment pas. Ainsi ne faut-il pas se surprendre si, en dépit de son jeune âge, le musée compte déjà plus de 700 pièces d'exposition. Sans vouloir en faire ici la nomenclature, il convient de mentionner particulièrement celles-ci: l'ancre de sept tonnes du paquebot *Empress of Ireland* échoué à Pointe-au-Père le 29 mai 1914 causant 954 pertes de vie, le sextant offert par la comtesse Septon au capitaine Gaudreau au



Une autre salle du musée où, comme on peut le constater par cette photo, les pièces d'exposition ne manquent pas.



Ce monument, érigé près du musée maritime, honore la mémoire du capitaine Bernier, célèbre navigateur canadien dont la renommée allait rapidement franchir nos frontières

cours de la Deuxième Guerre mondiale, une partie de membrure de la coque du navire de Jacques-Cartier "La Petite Hermine", un octant de bois datant de 1786, la roue à gouverner du yacht Olga Constantinova ayant appartenu à la soeur du dernier tsar de Russie et l'octant du capitaine Bernier.

Hommage au capitaine Bernier

En plus de rappeler la mémoire du capitaine Bernier par l'exposition d'objets qui lui ont appartenu, le musée devrait être prochainement appelé — c'est le désir du présent conseil d'administration — le musée maritime Bernier.

Fils de l'Islet, le capitaine Joseph-Elzéar Bernier acquit une réputation qui fit rapidement le tour du monde. Capitaine à 17 ans, il devait marquer notre histoire en se rendant assurer la souveraineté canadienne dans les territoires de l'Arctique. En plus d'être honoré par plusieurs organisations scientifiques internationales, le gouvernement canadien devait reconnaître ses exploits en élevant un monument à sa mémoire et en donnant son nom à l'un de ses brise-glace.

Le musée vient de terminer sa cinquième saison d'activités. Son avenir semble prometteur si l'on en juge par les visiteurs — 28 000 au cours de 1972 — qui se font de plus en plus nombreux. Au fait, si vous passez un jour à l'Islet-sur-mer, pourquoi ne le visiteriez-vous pas? Il est ouvert tous les jours entre le 15 juin et le 15 septembre.

CHEBUCTO HEAD

marine aids centre

by Michael Turner
Regional Engineer, Electrical,
Maritimes Region, Marine Services.

Already well established as a major Canadian seaport and naval base, Halifax continues to experience steady growth in cargo traffic with the advent of containerization and the ever-increasing demand for petroleum products. To meet the high density of ship traffic in the port area, the Ministry of Transport recently established a Marine Traffic Regulatory Centre at Chebucto Head, just outside of Halifax Harbour.

Known to thousands of servicemen as the last Canadian landmark seen from their troopship enroute to Europe, Chebucto Head is now the site of a modern, single-story structure which houses the men and equipment necessary to provide a 24-hour-a-day information and safety service for shipping, shipping agents, and pilots in the Halifax area.

The centre already has radio coverage on Very High Frequency and Medium Frequency channels of the harbour areas and approaches. Radar coverage of the approaching sea lanes is provided by a modified land-based marine radar formerly used at Camperdown Marine Radio. The Ministry, however, will spend approximately $700,000 in the next two years to equip the Chebeucto Head Centre with what will be the most advanced Harbour Surveillance Radar System in Canada, and one of the most modern in the world.

First phase of the expansion and modernization program is under way with work started on an addition to the Chebucto Head Centre and upgrading of communications facilities in the Harbour area and approaches. The engineering phase has been completed with tender specifications for the new Radar System prepared by the Ministry's Marine Services Division, assisted by peronnel of the Telecommunications and Electronics Branch. Major manufacturers submitted tenders and award of contract is expected at any time.

Capabilities

The control console at the Chebucto Head Centre will allow the marine traffic regulators to control both radar systems and video tape for permanent record of any happenings of interest seen on the radar screen, and will be able to communicate directly with each ship operating in the area.

The main unit will consist of dual X band radars (with one as "Standby") operating into a nine-foot slotted waveguide antenna and will provide radar coverage within the harbour area up to Maugher's Beach Light and seaward to 15 to 20 miles, to cover the coastal sea lanes and harbour approaches.

An unmanned unit on George's Island in Halifax Harbour, remotely controlled from Chebucto Head will provide detailed high resolution coverage of the inner harbour from Maugher's Beach to the Harbour narrows area.

Radar surveillance will be similar to the existing Strait of Canso, Chedabucto Bay system, but will be more refined with modern equipment, and will include a number of improvements ga-



Lighthouse and Control Station Chebucto Head, entrance to Halifax Harbour.

Marine Traffic Regulator at the traffic Control Consol. Blackboard on the left indicates occupied berths in the Harbour complex.



ined with the operation of the Strait of Canso system. The Chebucto Head system will incorporate a high speed digital mini computer, coupled to the Radars to permit rapid calculation of the closest point of approach of two ships, or a ship and a chosen fixed reference point. This will add still another dimension of safety to the system by greatly speeding up the present method of manually plotting ship courses and movements. It will make use of computerized handling of pilotage scheduling, estimated time of arrival, shift schedules for the ship regulators, and many other features.

Master Responsible

The new radar systems will do much to improve safety of navigation in the area by establishing precisely a vessel's position, course, and speed. But shore-based radar and Marine Traffic Regulators can still play only a small part in the navigation of sea-going ships, as responsibility for the safe navigation of his vessel always rests with the master. To assist him, the Ministry has continued to maintain an extensive system of fixed and floating aids to marine navigation, such as fog alarms, lighthouses, and buoys. These systems are still important to the master of a vessel approaching his port after a long ocean voyage, or navigating along our coasts.

To integrate the traditional navigation aids available to all mariners regardless of how little radio or radar equipment they carry on board, the Chebucto Head Centre will continuously monitor a number of the floating aids within radar range of the Centre, and several of the major light and fog alarm stations along the coastal approaches to Halifax.

Instantaneous comparison of visual buoy target positions with their pre-determined correct locations is made possible by special equipment with the radar. Independent of the radar and communications systems, a separate console will allow the Traffic Regulator to monitor the status of automated Lightstations in the Halifax area.

Marine "Traffic"

Just as no system of roads and interchanges would be complete or usable today without traffic regulations and the familiar local traffic policeman, the Marine Traffic System in Halifax Harbour and approaches must be supported by well planned and evenly applied traffic and routing regulations. These regulations must achieve maximum possible safety of navigation while hopefully expediting the efficient movement of commercial, military, fishing and pleasure vessels. Such traffic regulations are now in effect in Halifax area under Marine Traffic Regulators at Chebucto Head, who are doing their part to ensure the safe and expeditious movement of all vessels.

In the Chebucto Head system, a ship must report it's expected time of arrival by radio or through its agent at least 24 hours before arrival



Marine Traffic Control Regulator, plotting the course of an approaching vessel.

George's Island, site of Fort Charlotte in Halifax Harbour, is the planned area for a remote radar station. Fortifications of the Fort are in the foreground.



in the area. Upon approaching the boundaries of the Traffic Regulation System, the vessel must contact the Chebucto Head Centre via VHF or MF International Radio Channels. By this time, the staff at the Centre will know all particulars of the incoming vessel, with special emphasis on any deficiencies to be reported in the onboard navigation equipment or the presence of pollutant cargoes such as crude oil.

Upon entering the regulated area, the vessel is assigned a listening watch on the sector frequency and must report its time of arrival at each of several compulsory "reporting points" and its estimated time of arrival at the next such point. The Marine Traffic Regulators closely monitor and assess the movements of each vessel to ensure maximum safety, and in the case of large tankers ensure that they are always allowed adequate manoeuvering room.

Marine Traffic Regulators and pollution prevention officers are authorized by the Ministry to ensure the safety of all in dealing with any vessels with inadequate navigation aids or carrying large pollutant cargoes. A clearly defined set of traffic movement and routing regulations for the Halifax area is essential, and regulations are being developed in co-operation with the local office of the National Harbours Board. On a wider scale, personnel of the Canadian Marine Transport Association are busy studying an over-all integrated Marine Traffic Movement System for Canadian waters.

Certainly, when the decisions are made for a national system, the experience being gained at Chebucto Head will have contributed greatly to future integrated Traffic Regulation systems.



Section of the Container Port, Halifax Harbour.

penguin island

By Capt. L.K. Eavis

A reluctant farewell, a shake of the hand, with clear instructions: "Watch that point on your starboard hand, bear hard to starboard after reaching it, keep the point close aboard then haul her to the north eastward inside Granny Rock and ye're all clear." Seeing once again these friendly seafaring people, my boyhood days had come vividly back, memories spanning 52 years of my life.

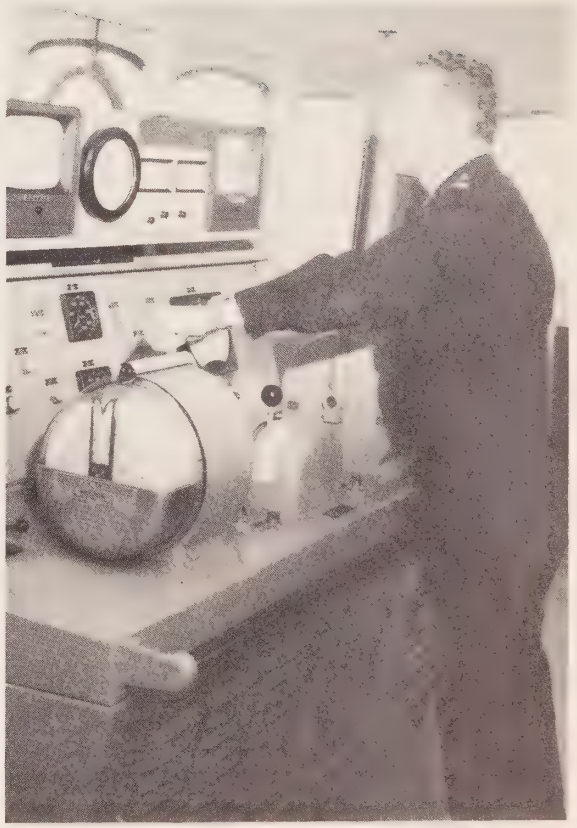
My return to Penguin Island came in August, 1972, whilst I was in command of the CCGS *Bartlett*, a buoy and supply vessel, carrying supplies to a group of lonely wind-swept islands, ten miles off Cape-La-Hune, on the Southwest coast of Newfoundland.

After my mother died in 1918, I went to live with my uncle, George Simms, a lighthouse keeper at Penguin Island. This period of my early childhood was very memorable as my aunt and uncle had six children of their own. Life was very full until tragedy struck again, and uncle died in April, 1920.

Schooner's crew rescued

During the period of my uncle's illness he was unable to attend the lighthouse. However, my older cousin, George, a strapping boy of 14, and my Aunt Cora, kept the lighthouse in operation. They also helped uncle to rescue the crew of a schooner which foundered off the island; they administered medical aid and kept the fog horn in operation until the four-member crew of the schooner was taken off the island by a fishing boat and transported to Cape-La-Hune for further medical treatment.

Relief came for my Aunt Cora in the form of a young Scots war veteran and his new bride who took over the operation of the lighthouse. Cousin



Captain L. K. Eavis, in command of the CCGS Bartlett. Returns to Penguin Island

George, who by this time had become the man of the family, took charge of the moving operation. We loaded all personal and family belongings into two dories and left the island for the Cape. There we found the flu was raging, and Uncle George was too weak to pull through.

Time has made a few changes during the past half century. The foundation of the old house still remains, the tiny graveyard a few steps from the house, with four unmarked graves surrounded by a white picket fence — silent under the purple iris hue and the August sunset. A new automatic lighthouse stands near the old foundation; the old well is still filled with unpolluted water; a ring bolt still leaves its rust mark on the rocks, where as children we were harnessed to prevent us from falling off the nearby cliff; the sea birds' cries are there, and the same feeling of time standing still.

A seafarer's welcome

My welcome back to the island came from Stewart Marsden, head lighthouse keeper and his helper, Roland Dunford. Both were interested to learn that I had lived on the island as a child and, as the case with all seafaring people, stories were abundant. Stewart Marsden had known my father many years ago.

Looking below to the cove, I noticed that all the cargo had been landed. Teluctantly I walked back to the landing area, a semi-quiet cove inside a sea-swept entrance, with breaking rocks and sunkers around in all directions. With boyhood memories clouding my eyes, I could still hear the shouts of goodbye, see the waving arms of friends, and the rocky shore beckoning me to come back again. I bade goodbye to the Penguins.



Dead ahead is Penguin Island, recalling early experiences for Capt. Eavis. Vivid memories prompted him to re-visit the island and its lighthouse.

C.C.G. RESEARCH

By David Austin
Public Affairs Officer

Inching their way off the expressway and north on Toronto's Bay Street through the slush and heavy traffic of a cold March morning rush-hour, drivers were too intent on other matters to notice the small ship with the distinctive red hull making its way from Pier 16.

The Canadian Coast Guard vessel *Porte Dauphine* was on her way to battle the unpredictable seas of Lake Ontario for a three-day series of criss-cross patterns while measuring water temperature, pollution content, types of plankton, samples for acid and alkaline content in the Lake. This is the first year that the research ship has foregone the January-February stand-down in order to provide additional information for the Canada Centre for Inland Waters, a Burlington-based scientific operation studying the Great Lakes.

Aboard were the ship's 17-man crew and five scientists from the Centre and the University of Toronto, manning the valuable instruments.

It's "Pretty Rough"

"It gets pretty rough out there," says Captain Archie Hodge, who has commanded ships since 1940. "We have been trying to find a way to batten down our bunks. Too many of us have awakened on the deck with our mattresses on top." But the crew has few complaints. Archie Hodge is renowned as one of the most hospitable captains on the Great Lakes. He has skippered the *Porte Dauphine* since 1958 when the Royal Canadian Navy loaned the ship to the Ontario Department of Lands and Forests. When the Ministry of Transport took possession in 1960, Captain Hodge transferred into the Marine Service with her.

Captain Hodge and the Chief Engineer, Glen Rourke, stand a regular watch.

"With a small crew it is only fair to the others that the officers take a regular stint," says Rourke, who has spent ten years in the Coast Guard and four years aboard the *Porte Dauphine*. This winter has brought its problems for the Chief. The ship was refitted with new generators in November only to have the shaft of one generator snap in February, forcing them to sit idle in Toronto Harbour for a month waiting for parts to arrive.

"We have less equipment than some ships, and have a small compact engine room. Our general routine covers most of the trifle breakdowns we encounter, but there are some trips where I never get my clothes off," says the Chief.

"Capable little ship"

The first engineer, Slim Lefaive, is one of the few members of the Coast Guard who can use "O.B.E." after his name. He was awarded the

honour during his service aboard cruisers and destroyers on Atlantic convoy duty in the Second World War. After eight months aboard he thinks that the *Porte Dauphine* is "a capable little ship." After 44 years at sea Lefaive admits he has been tossed out of his bunk a couple of times in Lake Ontario's Gales. "But it has to get pretty uncomfortable before it wakes me up," he says with a grin.

Seaman Carl Anderson has spent six years aboard the research ship. While in port, he and his colleagues were painting the officers' quarters as they worked their way along the ship's interior from bow to stern. Come the spring, they will start on the outside. What bothers Seaman Anderson most about the rough weather is not the sleeping but the mess in the mess.

"The scientists and new crew members are just learning that you have to batten down everything, like coffee cups or milk jugs when you leave the mess," he says. "Because they often forget to stow the stuff away the mess gets into terrible shape after a bout of rough weather."

Gerry Armstrong is an oiler with 23 years in the Coast Guard and ten of them spent aboard the *Porte Dauphine*. He doesn't mind the winter duty at all and likes to tell stories, not about the weather on Lake Ontario, but about conditions on Lake Superior in December when the *Porte Dauphine* used to do a quick circuit to retrieve lighthouse keepers.

Stormy Removal

"We would have to send a small boat over, sometimes in the middle of the night, and back they would come with televisions; goats, dogs, furniture, wives, venison or anything else a keeper wanted to take back to civilization with him. Unloading all that gear onto the deck in ten-foot waves was a lot of laughs but a good go," he says.

The most unusual cargo Armstrong has seen was on another Ministry ship in 1952. "We took over some deer and caribou to Caribou Island in Lake Superior because the Department of Lands and Forests wanted to stock the island." The crew didn't try to coax the animals into the small boats for the last 100 yards or so to the island. The animals went over the side and swam over themselves.

Captain Hodge thinks the secret of sailing on the Great Lakes in the winter is timing. "There are very few ports of refuge open along lake Ontario and there are only two on the American side. While we sail with radar it can be completely blotted out in a real snowstorm. And the steam fog that comes when the temperature approaches 32 degrees is a real problem. Don't worry too much about a gale as long as I can time it so we are heading into it"

The *Porte Dauphine* is able to break through ice but the curse of winter navigation is not that serious a problem on Lake Ontario. The worst incident with ice encountered last winter came



The Coast Guard vessel Porte Dauphine covered in ice after a brief trip into the unpredictable waters of Lake Ontario last winter. Silhouette of Toronto's skyline in the background.

when the ship sought refuge in a harbour near Kingston. At eleven p.m. there was very little ice but by five the next morning the winds had driven packs into the harbour and the ship found itself in ice five to six inches thick. And for a 600 horsepower engine, breaking through ice that deep can be a real strain.

Skipper rates praise

Of their captain, the crew is most complimentary. "He gets us out there and he brings us back okay," says Slim Lefaive. And Captain Hodge thinks that is the highest compliment any skipper can receive.

This winter every other week the *Port Dauphine* leaves Toronto harbour to join the *Limnos*, a ship operated by the Centre for Inland Waters, to traverse Lake Ontario with their scientific instruments. If the crew is lucky, the trip will last only three days, but if the wind is up, it may take much longer.

There will be the continuing program of sampling temperature, wind, and water quality so the scientific community can add to its knowledge of the Great Lakes. In the future this knowledge may bring about year-round navigation of inland waters.

But come what may the only research ship in the Canadian Coast Guard will do its bit by performing whatever is asked, even if it does mean the occasional midnight fall out of bed.



Captain Archie Hodge, of the C.C.G.S. Porte Dauphine, checks his course on Lake Ontario.

People in the News

Ceux qui ont fait les manchettes



Transport Minister Jean Marchand and the United States Ambassador to Canada, His Excellency Adolph Schmidt, recently (February 26) signed an Agreement to promote safety of life and property on the Great Lakes of North America by means of radio. After the ceremony, Mr. Marchand hailed the treaty as "a very important agreement for both countries, particularly in light of the growing importance of the Great Lakes as an artery for international trade". Ambassador Schmidt commented: "We should take every possible precaution we can to improve communications on our inland waters. This agreement represents a very constructive step towards enhancing marine safety. Even if it only saves one life it will have been worth our joint effort".

M. Jean Marchand, ministre des Transports, et M. Adolph Schmidt, ambassadeur des Etats-Unis au Canada, ont signé le 26 février dernier un accord visant à promouvoir la sécurité des personnes et des biens sur les Grands lacs au moyen des radiocommunications. Après la cérémonie, M. Marchand s'est félicité de la signature de cet accord qu'il a qualifié de "très important pour nos deux pays, surtout en raison de l'importance croissante des Grands lacs comme voie de commerce international". Pour sa part, l'Ambassadeur Schmidt a souligné la nécessité de "prendre toutes les mesures possibles pour améliorer les communications dans nos eaux intérieures. Cet accord, a-t-il ajouté, constitue une étape très constructive vers l'augmentation de la sécurité maritime. Même s'il ne sert à sauver qu'une seule vie, cela justifierait nos efforts conjoints."

People in the News

Ceux qui ont fait les manchettes



The week of May 13, 1973, has been proclaimed "National Transportation Week" throughout Canada. Transport Minister Jean Marchand has accepted the invitation to be Honorary National Chairman of the event, which is organized annually to draw attention to the vital role of the transport industry in Canada.

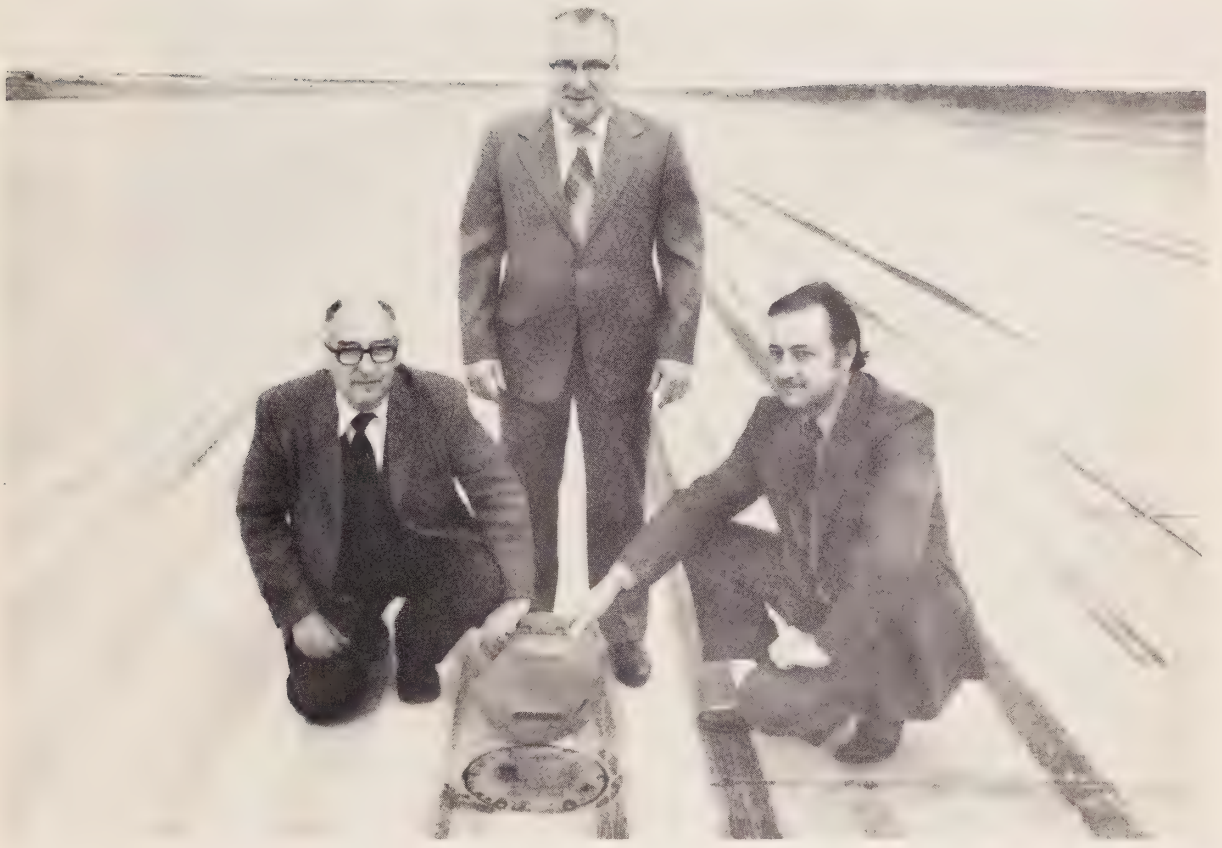
Canadian National Freight Sales Manager Mel Beaupre (left) outlines some of the events to the Minister, Mr. Marchand, and Robert Turner, Director of Public Affairs, Ministry of Transport, (right).

La semaine du 13 mars 1973 a été proclamée "Semaine nationale des transports" dans tout le Canada. M. Jean Marchand, ministre des Transports, a accepté de présider d'une façon honoraire cette manifestation organisée chaque année pour attirer l'attention du public sur le rôle vital joué par les transports au Canada.

Sur notre photo, M. Mel Beaupré (à gauche), directeur des ventes des Chemins de fer nationaux du Canada, expose certaines des activités de la Semaine à M. Marchand et à M. Robert Turner, directeur des Affaires publiques du Ministère (à droite).

suggestion awards

primes à l'initiative



A joint award of $1,600 went to Robert C. Hagell and John N. Hines of Halifax for their proposal of a modification of airport runway lights to enable installation of a protective weather covering for the sealant. Seen here on a runway at Halifax Airport with the equipment are, left to right, Mr. Hagell, K.J. Robinson (Airport Manager), and John N. Hines.

Une prime de $1 600 a été accordée à MM. Robert C. Hagell et John N. Hines de Halifax pour leur projet de modification des feux de piste d'aéroport visant à les rendre étanches. Sur notre photo prise sur une piste de l'aéroport d'Halifax, on voit de gauche à droite, MM. Hagell, K.J. Robinson (directuer de l'aéroport) et John N. Hines.

suggestion awards (cont'd.)

primes à l'initiative (suite)

Raymond Lionel Proulx, Edmonton, Alberta. $600. Suggested the use of a Clinometer to set the angle of Visual Approach Slope Indication System, a visual aid for aircraft landing. The unit can be constructed for approximately $25, and can be operated by anyone after a brief explanation.

Vern G. Gulbransen, Grande Prairie, Alberta. $50.

Raimo L.O. Savolainen, Port Hardy, British Columbia. $40.

James T. Dingley, James D. Hamilton, Robert E. Boudreau, Saint John, New Brunswick. Joint suggestion award. $90.

Daniel D. Miller, Richard Page, Port Hardy, British Columbia. Joint suggestion award. $40.

Gordon H. Wastle, Enderby, British Columbia. $20.

Robert D. McLeod, Winnipeg, Manitoba. $40.

Raymond-Lionel Proulx, Edmonton (Alberta), $600. M. Proulx a proposé l'emploi d'un clinomètre pour caler l'angle de l'indicateur visuel de pente d'approche, appareil servant à l'atterrissage aux instruments. L'appareil peut être construit pour environ $25. Toute personne peut le faire fonctionner facilement après de brèves explications.

Rita Lafortune, Hull, Quebec. $100.

Richard W. McCaffrey, Edmonton, Alberta. $215.

Kenneth J. Proctor, Whitehorse, Y.T. $200.

George B. Dodds, Kenora, Ontario. $75.

Bruce Brenot, Ottawa, Ontario. $50.

Brian R.W. Tugham, Ottawa, Ontario. $50.

Charles R. Pearce, Comox, British Columbia. $50.

Retirements

à la retraite



Robert Turner, Director of Public Affairs, seems to be saying, "We'll certainly miss you, Scotty!" for all the Public Affairs people and many others in the Ministry and elsewhere. The French poodle looking on admiringly is Danny, who came to the party to wish his good friend all the best.

M. Robert Turner, Directeur des Affaires publiques, semble dire: "Vous nous manquerez beaucoup, Scotty", au nom de tous les employés des Affaires publiques et de bien d'autres encore, tant au Ministère qu'à l'extérieur. Le caniche, Danny, est venu lui aussi participer à la fête organisée en l'honneur de son amie.

Bertha Viola Scott, affectionately known as "Scotty" to her many friends and colleagues inside and outside the Ministry, retired last month (February) after almost 36 years of service as a Transport employee.

Scotty commenced her long and distinguished career with the Information and Publications Section of the Civil Aviation Division and, in 1950, she joined the forerunner of the present Public Affairs Branch, then known as the Information and Editorial Bureau.

Lengthy exposure to transportation developments and literature plus a keen memory gave Scotty a well-merited second nickname, that of "Transport's walking encyclopaedia".

Her friendly disposition and wealth of knowledge will be sorely missed by all those she helped over the years.

Mlle Bertha Viola Scott ("Scotty" pour ses nombreux amis et collègues), a pris sa retraite en février dernier après avoir passé près de 36 ans au ministère des Transports.

Mlle Scott a commencé sa longue et remarquable carrière à la Section des publications et de l'information de la Division de l'Aviation civile. En 1950, elle passait au service de l'actuelle Direction des affaires publiques, alors connue sous le nom de Bureau d'information et de rédaction.

Ses nombreuses années de service aux Transports et son excellente mémoire lui ont valu un second surnom bien mérité, celui d'"encyclopédie vivante des Transports".

Son amicale bienveillance et ses vastes connaissances manqueront énormément à tous ceux qui avaient trouvé chez elle une réponse à leurs problèmes.

national ports council

conseil des ports nationaux



Members of the National Ports Council who attended the meeting held in Ottawa at the Conference Centre on March 14 and 15. Back row, from left to right: J.H.W. Cavey, Chief, Harbours and Ports, W.G. Rathie, Chairman, Vancouver Port Authority and Member, Pacific Region; D.L. Scheult, New Brunswick representative, Charles Gress, Chairman, Windsor Harbour Commission. Front row, from left to right: Dr. Pierre Camu, Chairman of the Council, I.C. Pollack, Chairman, Quebec Port Authority; Chris Brown, Chairman, Fraser River Harbour Commission; Del Taylor, Chairman, National Harbours Board, and Guy Beaudet, Member, St. Lawrence Region.

Les membres du Conseil national des ports, à leur réunion qui a eu lieu au Centre des Conférences d'Ottawa les 14 et 15 mars. Au second plan, de gauche à droite: MM. J.H.W. Cavey, chef des havres et ports, W.G. Rathie, président de l'Administration portuaire de Vancouver et représentant de la région de l'Ouest, D.L. Scheult, représentant du Nouveau-Brunswick et Charles Gress, président de la Commission du port de Windsor. Au premier plan, toujours de gauche à droite: MM. Pierre Camu, président du Conseil, I.C. Pollack, président de l'Administration portuaire de Québec, Chris Brown, président de la Commission des ports du Graser, Del Taylor, président du Conseil des ports nationaux et Guy Beaudet, représentant de la région du Saint-Laurent.



NATIONAL PORTS COUNCIL IN CONFERENCE

LE CONSEIL NATIONAL DES PORTS EN CONFÉRENCE



TRANSPORT CANADA

MAY/JUNE 1973 MAI/JUIN

41 T15
T61



Twin Otter



CONTENTS — SOMMAIRE

transport council — conseil des transports 2

transport council message — message du conseil des transports 3

title page — page des titres 4

voices of experience 5

operation clean up 10

montréal 11 12

the challenging season 17

la météo dans la langue de molière 20

halifax 19 22

suggestion awards — prime à l'initiative 25

miss transport contest 27

las vegas night 28

people in the news — ceux qui ont fait les manchettes 29

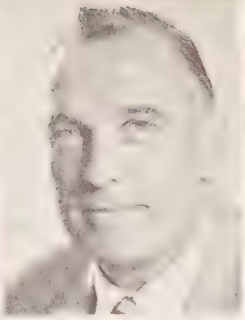
flight plan process 31

retirements — à la retraite 32

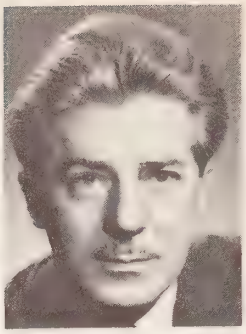
suggestion award form — formulaires pour primes à l'initiative 35



E.J. Benson



O.G. Stoner



Hon. J. Marchand



G.A. Scott



M.D. Armstrong



J Guay

TRANSPORTATION COUNCIL



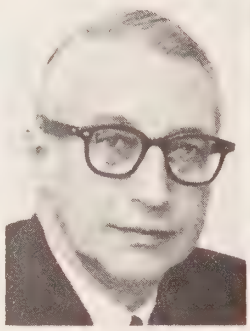
J.Y. Clarke



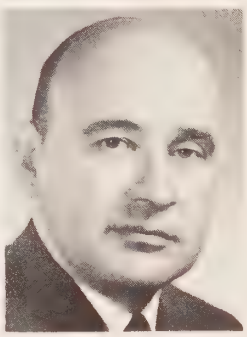
J.M. Favreau



Mel Hagglund



W.H. Huck



Pierre Camu

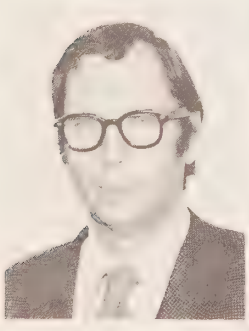


W.M. Gilchrist

CONSEIL DES TRANSPORTS



Roy Illing



W.F. Nelson



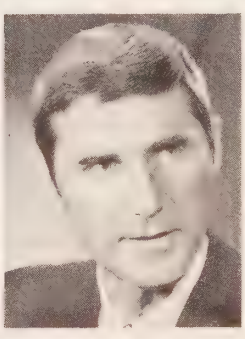
Robert Turner



Del Taylor



John Gray



Andre Laframboise

TRANSPORTATION COUNCIL MESSAGE



C.C. Halton

On 24 April, 1973, the Minister announced the selection of Rockcliffe Airport and the Victoria Parking Lot in Montreal as the STOLport sites for the STOL demonstration service. This announcement culminated much effort in the Ministry and a recent period of public consultation and dialogue which permits the project to enter the final stage of implementation.

In addition to its value as a new air transport service, the STOL demonstration service is important to the Ministry from a number of other aspects. After careful consideration of possible routes for the demonstration, Ottawa-Montreal was selected because good passenger traffic volumes exist, there is an appropriate air traffic environment, and there is good international visibility. Another important factor in this decision is that good transportation exists in competing modes and thus STOL can be evaluated as an element of the total passenger transportation system serving the two cities. An opportunity is presented to measure and evaluate passenger preferences in their choice of mode. The results of this analysis will be used to evaluate and improve the transportation system serving the nation's capital, and to provide a basis for the evaluation of STOL in other potential applications in Canada

The demonstration service also exploits a valuable opportunity in the technical/regulatory field and will be an international "first" for Canada. A consistent set of regulations and operational criteria for STOL operation in the urban environment and enroute does not exist anywhere in the world. To satisfy this requirement and to place Canada in an influential position necessary regulations and criteria are being developed for the demonstration by the Canadian Air Transportation Administration and a comprehensive airborne data acquisition system will be used to amass a body of data to prove and support these regulations and criteria.

Finally, this project has permitted an exercise of the new Ministry's organizational and administrative approach to a project in which a number of Ministry components are participating. Ministry Central Staff, Canadian Air Transportation Administration, Transportation Development Agency, and Air Canada have worked closely together not only in the development of the system, facilities, and service but also in designing the project as a transportation experiment and interfacing with concerned community residents. While final evidence represented by successful project completion is yet to be realized, the entry of the project into the final stage of implementation can be regarded as a measure of achievement by the components involved and an indication of the successful integration of the activities of all concerned.

C. C. Halton

MESSAGE DU CONSEIL DES TRANSPORTS

Le 24 avril 1973, le Ministre a annoncé le choix de l'aéroport de Rockcliffe et du stationnement Victoria à Montréal comme emplacements des Adac ports qui seront desservis par le service de démonstration Adac. Cette déclaration venait couronner d'importants efforts du Ministère et clôturer une récente période de consultation et de dialogue avec le public, qui a permis d'en arriver à la dernière étape de mise en oeuvre du projet.

En plus de sa valeur comme nouveau service de transport aérien, le service de démonstration Adac est important pour le ministère des Transports pour plusieurs autres raisons. Après avoir étudié attentivement les routes possibles pour le service de démonstration, le Ministère a choisi la route Ottawa-Montréal parce qu'elle offre un volume important de passagers, permet une séparation convenable entre le trafic Adac et celui des avions conventionnels et est susceptible d'attirer l'attention d'autres pays. Un autre facteur important est la présence d'autres systèmes concurrents et efficaces de transport entre Montréal et Ottawa, de sorte qu'il devient possible d'évaluer l'Adac par rapport à l'ensemble des moyens de transport des passagers entre les deux villes. Il constitue également une occasion de mesurer et d'évaluer les préférences des passagers quant au mode de transport. Les résultats de cette analyse serviront à évaluer et à améliorer le système de transport qui dessert la capitale nationale et à fournir une base pour l'évaluation de l'Adac en vue de son emploi possible ailleurs au Canada.

Le service de démonstration, le premier de son genre dans le monde, présente aussi une bonne occasion d'évaluer les techniques et les règlements à appliquer à l'Adac. Il n'y a actuellement aucun ensemble cohérent de règlements et de normes opérationnelles concernant le fonctionnement des Adac au-dessus des villes et dans la phase en route. Pour combler cette lacune et pour placer le Canada dans une position forte à cet égard, l'Administration des transports aériens est en train d'élaborer pour le service de démonstration les règlements et les critères indispensables à l'exploitation d'un service Adac. En même temps, elle prévoit l'installation à bord des avions d'un système complet d'acquisition de données, afin de recueillir tous les renseignements nécessaires pour évaluer les règlements et les normes opérationnelles établies.

En dernier lieu, la projet Adac a permis au Ministère d'employer sa nouvelle méthode de réalisation des projets qui se fonde sur la participation d'un certain nombre de composantes. L'Administration centrale, l'Administration des transports aériens, le Centre de développement des transports et Air Canada ont travaillé en étroite collaboration non seulement pour élaborer le système, les installations et le service mais aussi pour concevoir le projet comme une expérience dans le domaine des transports et pour se mettre en rapport avec les populations directement concernées. Même si le projet n'est pas encore terminé, son entrée dans la phase finale de mise en oeuvre peut être considérée comme un succès pour les composantes qui y ont participé et comme une preuve de la bonne coordination de leur activité.

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Editor: R.G. Towers

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Rédacteur francais Jean-Louis Bibeau

Vous pouvez reproduire les articles de cette revue en ayant le soin de mentionner TRANSPORT CANADA comme votre source d'information.

Front Cover **Transport Canada**

Transport Canadas, front cover depicts a portrait of STOL. Airtransit is a new subsidiary of Air Canada, utilizing Rockcliffe Airport, Ottawa, and Montreal's Victoria parking lot. The new service is expected to be underway by the summer of 1974, and will mark the first demonstration of a true STOL service in the world.

Airtransit, une nouvelle filiale d'Air Canada, exploitera un service Adac entre Ottawa (aéroport de Rockcliffe) et Montréal (parc Victoria). Le Twin Otter sera l'avion utilisé pour ce service dont le lancement est prévu pour l'été 1974. Il s'agira là de la première démonstration mondiale d'un tel service.

TRANSPORT CANADA

THE VOICES OF EXPERIENCE

by K.E. Richarson
Area Information Officer C.I.D.A.

Indonesia's economy has been on an upward swing since the inception of its Five Year Development Plan three years ago. Marked growth in investment, output, and input have been noted as the island republic's economy continues to expand.

Main emphasis of the Plan has been on expansion in production of agricultural and forest products, and rehabilitation and expansion of infrastructure, including electric power, communication facilities, and transportation.

Development in transportation — and civil aviation in particular, has not kept pace with that of other sectors. It's a serious problem for a country with 123 million people, living on more than 6,000 islands stretching over an area almost as big as Europe west of Russia.

An indication of the Indonesian government's awareness of the critical situation is reflected in the allocation of $200 million for transportation development in 1972-73. Of this, over $60 million is slated for civil aviation projects.

In the words of a Canadian aviation expert, C. Eric B. McConachie, of Montreal, "Indonesia faces the same situation Canada faced 20 years ago in civil aviation. Canada had many rather primitive and undeveloped areas in the Arctic and northern parts of the provinces. Air transportation to these areas was also relatively unsophisticated, consisting mainly of 'bush pilot' operations. These pioneer aviators had little in the way of communications or information about weather or ground conditions."

TRANSPORTATION NEEDS

"From what I can gather from reading about it and visiting the country, Indonesia relies very heavily upon air transportation, because of limited and undeveloped ground transportation facilities. Consequently, it's a key item in their development program. Some work had been done in the past, but the approach was not systematic or coordinated. However, the government recognized this, and did something about it."

Mr. McConachie is president of Aviation Planning Services (APS) of Montreal. APS is a consulting firm retained by the Canadian International Development Agency earlier this year to conduct a major sectoral study of civil aviation in Indonesia.

Although Indonesia was only designated as a country of concentration in Canada's aid program in 1970, a considerable amount of Canadian aid activity has been concentrated in this sector.

"It's an area in which we have a lot of valuable experience and expertise", said Bruce Wilson, CIDA project officer for Indonesia, referring to the development of Canada's air transportation. "The APS team has a cumulative total of 250 man years of experience in various aviation fields. Its president has been over 20 years in the field himself. We are helping overcome one obstacle to development by providing experts not yet available within the country".

The 12-man team of APS experts has been at work since April of this year on the study, covering the sector's requirements through the year 1985. Main objective of the study is a master plan for the phased rehabilitation and development of the sector.

Included are reviews of existing facilities, air travel demand history, present and future air service and operations capability, infrastructure requirements in both private and public airline operations, national airport and airways plans, navigational systems and aids and information and data on management, operations, and financial analysis for future planning.

PREPARING FORECASTS

"To date we have finished a complete review of staff and training within the sector", said Mr. McConachie, "as well as a survey of facilities. The latter included inspection of 22 airports



The arrival of the first of two twin Otters was the basis for a ceremony at Merpati Nusantara's offices at Djakarta International Airport, with Canadians and Indonesians participating. Left to right, A.D. Leimena, Director, Planning and Finance (MNA); Bill McKay, Ferry Pilot; Michael Call, CIDA representative, Canadian Embassy, who is handing the aircraft log book to Air Marchal Santos, President Director, MNA; two of MNA's pilots, and right, Dave Marko, CIDA aviation adviser.

strung from one end of the island republic to the other. We have also obtained extensive historical traffic data, which is being used to prepare a forecast of future traffic demands."

"Work in other areas is progressing on schedule. Barring any unforeseen circumstances, we should be able to complete the study within the target date of January 1973. The final report will contain much of the information needed to make decisions regarding major investments in the sector to overcome existing and future air traffic pressures." The sectoral study team is working closely with another Canadian team of aviation experts, sent to Indonesia by CIDA in July of last year to help with immediate problems facing development of policy, programs, operations and financial standards for civil aviation.

STUDY TEAM

Heading the three-man advisory team is Boleslaw (Bob) Rychlicki, of Montreal, a veteran of service with Polish, French, English and Canadian Air Forces during World War II. A financial expert in Canadian industry, Mr. Rychlicki also helped to build one of Canada's commercial airlines from a "bush" type operation to a 50-unit airline providing domestic and international service.

Mr. Rychlicki also served as an adviser to United Nations aviation agencies helping countries in Africa with aviation development.

"This group is more concerned with the day-to-day operations in the sector," Bruce Wilson explained. "Since their arrival they have been advising the Directorate General of Air Communications, of the Indonesian Ministry of Transport, on various operational aspects. This includes the establishment of priorities, allocation of funds, and provision of services."

TRAINING CENTRE

Skilled manpower requirements for air transportation operations were also assessed by Indonesian and CIDA officials in preliminary planning sessions. Last fall a formal request was received from Indonesia asking CIDA for assistance in improving the operational capabilities of the Cjurug Civil Aviation Academy.

This self-contained training centre near the capital of Djakarta— sole source of civilian pilot training in Indonesia — also provides many other types of training for the civil aviation sector.

CIDA agreed to provide a grant of $950,000 to cover the cost of providing two advisers, training materials, and equipment for the academy. Equipment included a 30-unit language lab, communications and control tower equipment, jet engine lab testing gear, diesel generators, and crash and refuelling vehicles.

Improvement of instructional capabilities at the academy was the main responsibility of one Canadian adviser, with the other helping to improve the fluency in English of air traffic controllers and pilots (air traffic control operations are carried out internationally in English).

A unique man-and-wife team from Waterdown, Ontario, was selected by CIDA for these tasks. Mr. Ralph Pynn will assist in evaluating and making recommendations for improvements in the academy's curriculum and methodology. An RCAF veteran of World War II, and owner of his own private plane, Mr. Pynn has taught physics at Ancaster High School for the past nine years.

His wife, Muriel, with 20 years, experience as an elementary school teacher, will conduct the English language training course at the academy.

CANADIAN HELP

The Ministry of Transport, in response to a request from the Indonesia Government and the International Development Agency for an observer with air traffic control background and

administrative experience, seconded R.M. Greenwood, Superintendent Air Traffic Control Procedures, Headquarters Ottawa.

The assignment called for participation in the planning, organizing and development of an ATS system, including: Airways and Air Routes, Regulations, Aeronautical Information services, preparation of manuals, training, licensing and application of related ICAO standards, recommending practices and procedures, sharing experiences, assisting where possible and assessing the need for further technical assistance in this field.

An economical air transportation system is necessary to serve the needs of the populace as well as International travellers "overflying" Indonesia on their way to or from Australia, stopping in Indonesia to visit famed "Bali", or participating in the development of this, the youngest country in Southeast Asia.

Another integral part of the Canadian program to help improve air transport in Indonesia was completed recently with the handover of two twin-Otter aircraft to Merpati Nusantara Airlines (MNA), at De Havilland Aircraft of Canada's Downsview, Ontario plant. The two planes and essential spare parts were provided for the Indonesia air carrier through a $1,325,000 development loan between the two countries. Also included in the agreement was an orientation program for MNA crews in Toronto.

MNA provides passenger and cargo service for different parts of the interior, including the mountainous province of West Irian, with extensive natural resources. In order to develop the area's potential, and meet increasing traffic demands, MNA identified the need for two STOL — Short Take-Off and Landing — type aircraft.

The twin-Otter, with its STOL capability, is ideally suited to transportation needs in West Irian's rugged terrain.

As part of the agreement De Havilland included the orientation training program on the twin-Otter at its Downsview plant. A 10-man team of MNA pilots and engineers completed the two-week training program during the month of July.

An aviation management expert was also provided, through a CIDA grant of $60,000, to advise the airlines on all aspects of its operation, including route analysis, tariff structures, systems analysis, data collection, and airline planning, organization, and management.

Tapped for this task by CIDA was a talented young aviation executive from Terrace, B.C., David Marko. This 37-year-old graduate of the University of British Columbia (master of business administration transportation) built Trans Provincial Airlines of B.C. from three aircraft to a 26-unit operation providing international, domestic, charter, and scheduled air service, during a four-year stint as general manager.

Since November of last year Mr. Marko has been working with MNA's staff at its head office in Djakarta. One of his major accomplishments was production of a 70-page manual of operations, as well as a cabin attendant's manual and handbook. Mr. Marko has also submitted several recommendations on operational methods and techniques and changes in management organization. Extensive in-service managerial training programs have also been carried out under his direction.

"It's a little too early to comment on the result of our assistance, since most of the projects only started a little more than a year ago," said Paul Krukowski, CIDA planning officer for Indonesia. "However, we feel we can make a substantial contribution to development in this sector. We have recognized the problems and priority needs identified by the Indonesians themselves. Now we are providing some of the money, expertise, and equipment needed to meet and overcome them."



Cjurug Civil Aviation Academy, a self-contained training centre near Djakarta, the sole source of civilian pilot training in Indonesia.



New airport under construction at Halim.



Modes of transportation in the capital of Indonesia, Djakarta.

OPERATION CLEAN UP

Students of Alert Bay, British Columbia, pitched in with a will last January to help clean up the thick, ugly bunker oil that overnight fouled the coasts of their beautiful Island.

The oil, which spread from the rock-pierced hull of the vessel *Irish Stardust*, coated shores far down the inner channel, with possibly the heaviest concentration occurring on this little island located near the northern tip of Vancouver Island.

Alert Bay is an unspoiled fishing village on the island, which is one-mile wide, and two-and-a-half miles long. The population is around 2,000, and boasts two Indian Bands, seven taxis, and seven miles of road.

The oily mess was particularly heavy in this hitherto unspoiled area, far from industrial activities, where the bottom of the channel can be seen clearly through some 30 feet of crystal-clear water. Numerous well-wooded islands in the vicinity abound in wildlife, including the increasingly rare bald eagle, which shuns populated areas.

The Indian bands live in great harmony with village residents. They are the Nimpkish, under Chief George Cook, and the recently amalgamated Whe-La-La-U under Provincial Judge William Scow as band manager. They often meet with village representatives on matters of common interest and the island children attend a joint school.

The Ministry of Transport acted immediately the spill was reported that Thursday morning, January 25th. Bruce Wain, officer in charge of Alert Bay Marine Radio Station, signalled regional headquarters. Within the hour, an aerial survey of the spill was under way. Within two hours, a plan of action had been formulated and put into action. Mr. Wain, who is president of the local Chamber of Commerce, reassured residents that everything possible was being done. Captain Iain Young, Steamship Inspector, chartered an aircraft to survey the area in company with Gerry Murakami, Transport radio technician, and a Fisheries officer. CCGS *Camsell* was directed to assess the extent of pollution and check navigational aids; CCGS *Sir James Douglas* and *Alexander Mackenzie* also were diverted from operational missions and dispatched to the scene with oil barges and peat moss, with the CCG Cutter *Ready* standing by. L.E. Slaght, District Manager of Victoria Marine Base, took over as on-scene coordinator.

Since the spill had gone unnoticed during the night, it was too late to protect the shores with oil booms and most of the work was concentrated on cleaning the beaches. Some 20 workers in the Local Improvement Program (LIP) were immediately set to work on this task. With the approval of Alert Bay Mayor H.J. Pickup, Indian leaders and school principal Joe Harrison, about 75 students in grades nine and ten left school early to work into the night with shovels and rakes as volunteers to clear the beaches of fouled gravel and jetsam.

The young people, both girls and boys, were disturbed by the oil spill effect on natural beauty and on the wildlife. Mr. Wain recalls a scene in which a truckload of youngsters arrived with an oiled seabird to be cleaned. They were, in fact, more heavily oiled than the bird, but the unfortunate creature was their prime concern.

The young people worked on Friday and some even volunteered to work Saturday, to keep the operation in full swing with steam cleaning, beach fires destroying oiled debris, and heavy equipment dumping oil-fouled gravel from the beaches on a road construction project.

Work continued throughout the area for weeks, with a large number of people hired by the Ministry of Transport. Perhaps the highlight of the occurrence, however, was the spirit and energy of Alert Bay's young people, who expended great effort to help restore their ocean paradise to its former beauty.

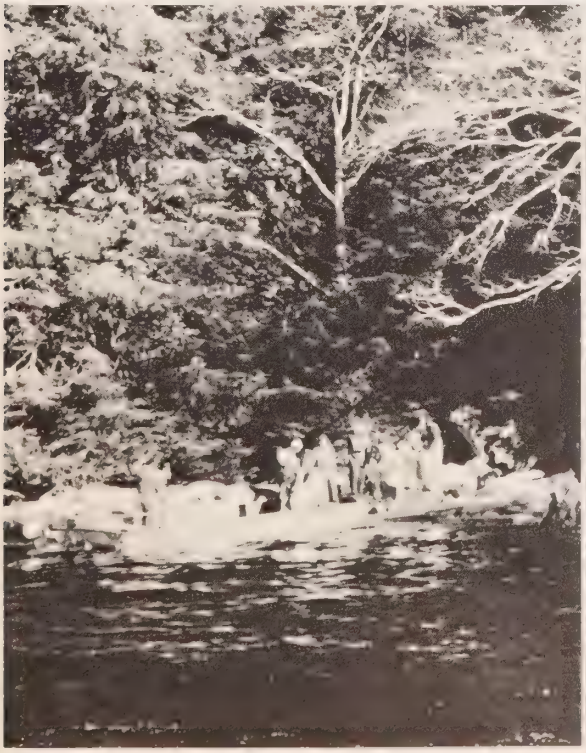
Certificate of Appreciation

The Western Region, Marine Services, of the Ministry of Transport greatly appreciates the spontaneous assistance given by the Students of Alert Bay Secondary School on 25th January 1973. This certificate is given in recognition of your help in cleaning up the oil spilled on Village beaches when the freighter Irish Stardust ran aground on Haddington Island.

L. E. Slaght
On Scene Co-ordinator

Certificate of appreciation and a $100 cheque was presented to Tony Wong, President of the Student Council, Alert Bay School, by L.E. Slaght, District Manager, Marine Services, Victoria.

Ministry of Transport sea truck disembarks students and local workmen in a polluted cove on Pearse Island.



Bulldozing oil polluted rocks, to form a protective shield for the shoreline embankment.



MONTREAL II

En 1966, alors que les Etats-Unis s'apprêtaient à envoyer le premier homme sur la lune, l'industrie aéronautique est à la veille de réaliser un des ses objectifs importants: la construction d'un avion géant de 365 places. Connaissant les dernières données technologiques et l'incroyable accroissement des demandes concernant le transport aérien, le ministère fédéral des Transports commence, cette année-là, une série d'études pour déterminer les besoins à long terme du système de transport aérien canadien, et plus particulièrement ceux de la région de Montréal.

Des prévisions concernant l'accroissement du trafic aérien pour les vingt prochaines années indiquent en effet que l'actuel aéroport international de Montréal — situé à Dorval — requérait, pour répondre à l'accroissement prévu, non seulement de nouvelles installations aéroportuaires mais, vers 1985, l'achat de terrains coûteux pour y construire de nouvelles pistes. De plus, avec l'arrivée de la première génération d'avions gros porteurs, la pollution par le bruit affecterait de façon sérieuse les milliers de résidents des environs de Dorval, entraînant l'application de restrictions sévères aux activités aéroportuaires — l'imposition d'un couvre-feu par exemple.

C'est pourquoi le 27 mars 1969, le ministère des Transports dépose des plans pour l'expropriation d'un vaste territoire situé à Sainte-Scholastique (qui fait maintenant partie de la nouvelle municipalité de Mirabel) et annonce qu'un nouvel aéroport y sera construit pour desservir la région de Montréal.

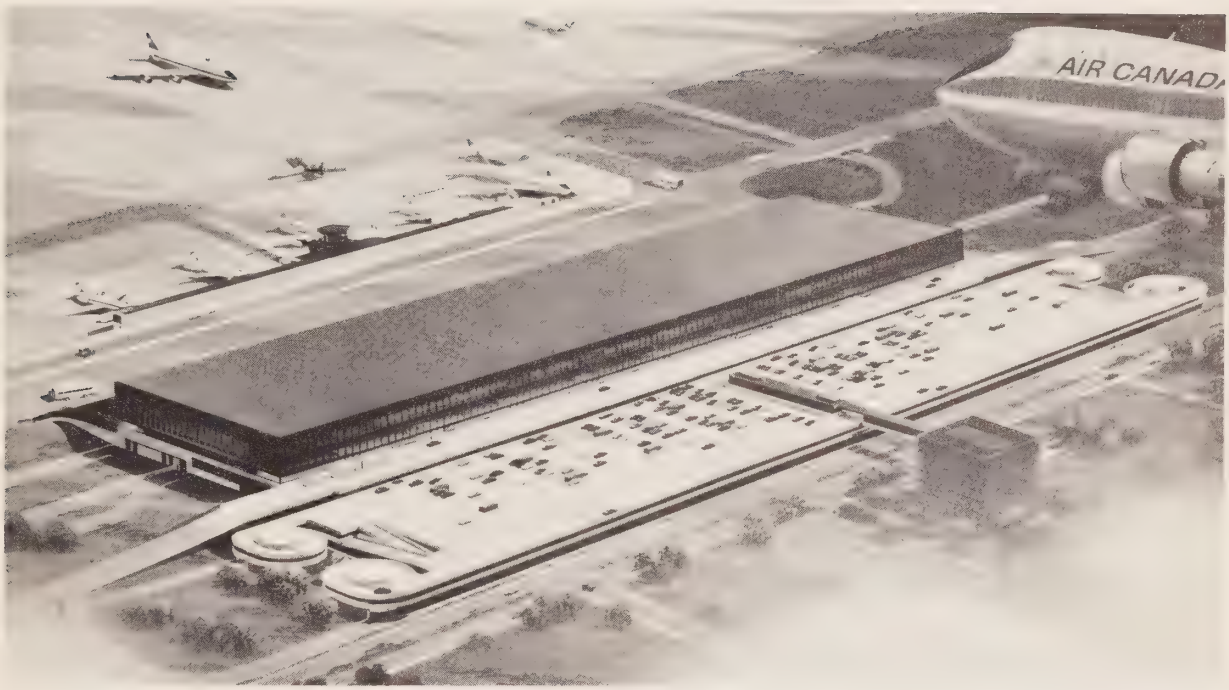
Les 88 000 acres ou 138 milles carrés de terrains expropriés pour la construction du nouvel aéroport international de Montréal, représentent les deux tiers de la superficie de l'île de Montréal, ou le dixième de l'Ile du Prince-Edouard...Pourtant, quand le projet sera complété, 20% seulement de toute la superficie expropriée sera destinée aux activités aéroportuaires proprement dites soit pour la construction des pistes, aérogares et services connexes. Pourquoi, alors, avoir exproprié un si vaste territoire?

Parce que l'expérience a prouvé que la planification d'un aéroport implique des objectifs à long terme: bien-être des individus habitant à proximité de l'aéroport, qualité de l'environnement... Parce que les aéroports constituent le point de rencontre du transport aérien et routier, ils font désormais partie intégrante des communautés qui les entourent et ont un impact considérable sur la vie des habitants de ces communautés. Parce que l'expérience acquise lors de l'implantation d'autres aéroports a prouvé qu'un vaste territoire doit être contrôlé par les autorités d'un aéroport, si l'on veut s'assurer une planification équilibrée et intégrée.

Mais l'acquisition d'une telle surface de terrains entraîne nécessairement des inconvénients: quelques milliers de personnes voient leur vie dérangée. Un tel bouleversement social à court terme doit être intégré dans l'objectif à long terme qui vise à améliorer pour des millions d'individus la qualité et l'efficacité du transport aérien.

Tôt en 1970, un Bureau de gestion immobilière a été mis sur pied à Sainte-Scholastique afin d'assurer la location des résidences, fermes, commerces et bâtiments du territoire exproprié et d'informer les quelque 3 200 propriétaires et 300 locataires touchés par l'expropriation. Au printemps 1973, 400 baux agricoles, 1 200 baux résidentiels et 100 baux commerciaux étaient en vigueur, ce qui représente environ 80% de la totalité des baux. Des normes ont aussi été établies pour la gestion des zones forestières.

De plus, les services d'une firme de consultants en aménagement ont été retenus pour définir la meilleure utilisation possible des terrains expropriés, compte tenu de leurs vocations naturelles. Ils ont fait d&s recommandations dens les domaines de l'agriculture, de l'habitation, de la sylviculture, de l'industrie, de la récréation, du transport par voie de terre aussi bien que sur les structures de gestion et les modes de financement.



Cette maquette donne un aperçu global de l'aérogare des passagers du nouvel aéroport international de Montréal. La nouvelle aérogare, qui accueillera dès 1975 près de quatre millions de passagers, comporte une structure de béton.

Finalement, le ministère des Transports a versé une somme de $100 000 pour la mise en oeuvre d'un projet de recherche concernant l'écologie du territoire exproprié. Sous les auspices du Conseil national de Recherches, le projet a été conduit par une équipe multi-disciplinaire, groupant des scientifiques venant de plusiers universités québécoises. Cette étude a permis d'évaluer économiquement l'impact de l'aéroport sur son environnement.

La planification du nouvel aéroport prévoit un transfert progressif des activités aériennes, par secteur de trafic, destiné à réduire l'activité de Dorval à un volume de trafic aérien inférieur à celui de 1971.

La première phase du transfert, prévue pour 1975, affectera le secteur des vols internationaux ainsi que les escales frontalières et intérieures qui s'y rattachent. Ce premier transfert massif amènera quelque 3.7 millions de mouvements de passagers au nouvel aéroport, tandis que Dorval en accueillera 5.2 millions.

Le volume du trafic aérien continuera d'augmenter rapidement dans les années à venir: Dorval et le nouvel aéroport atteindront leur point de saturation en 1979, avec des volumes annuels respectifs de l'ordre de 6.8 millions et 5.8 millions.

En 1980, un second transfert d'opérations est prévu, portant le trafic annuel du nouvel aéroport à 10.3 millions de mouvements de passagers et réduisant le trafic de Dorval à 3.2 millions.

Ce second transfert affectera le secteur des vols frontaliers ainsi que certains vols intérieurs. (De nouvelles installations aéroportuaires seront alors requises au nouvel aéroport alors que les installations en place à Dorval subiront des modifications).

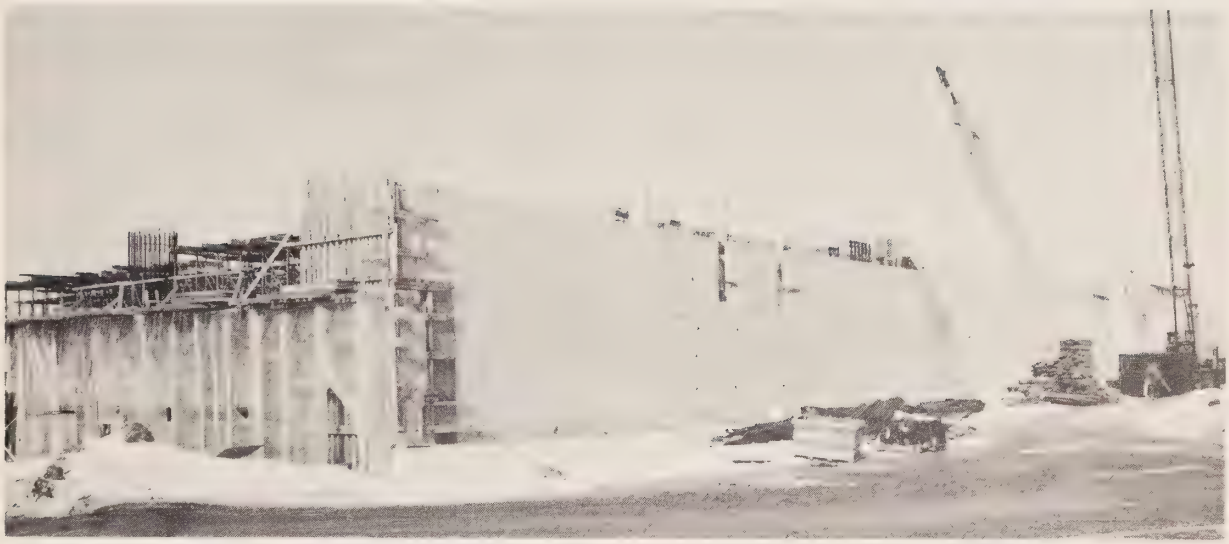
Après 1985, d'autres transferts sont prèvus, jusqu'à ce que le nouvel aéroport assure tout le trafic aérien régulier; Dorval recevra alors annuellement environ 3.7 millions de mouvements de passagers, alors que le nouvel aéroport accueillera plus de 17 millions de mouvements de passagers.

Le ministère des Transports a mis sur pied à Montréal le Bureau d'aménagement du nouvel aéroport international de Montréal (BANAIM), organisme groupant des spécialistes du Ministère et du secteur privé, qui est responsable de l'élaboration du plan directeur du nouvel aéroport en plus de veiller à la première phase de la construction de celui-ci. Par la suite, le Ministère retient les services d'un consortium d'ingénieurs et d'architectes consultants, les Consultants en Aéroports Internationaux de Montréal (CAIM) à qui il confie toute la gérance et la coordination des travaux de construction sur le site pour cette première phase.

Les travaux de construction de la première phase doivent être complétés au printemps 1975. Les installations aéroportuaires — qui couvriront approximativement 5 200 acres — sur les 17 100 acres de la zone opérationnelle, comprendront deux pistes et leurs voies de circulation, une aérogare (pouvant recevoir 6 000 mouvements/passagers à l'heure ou environ 6 millions par année) une aire de trafic offrant 22 postes de stationnement pour les avions, une tour de contrôle, les édifices groupant les services commerciaux, administratifs, d'entretien et d'exploitation, un réseau routier principal et des voies d'accès secondaires, en plus des infrastructures telles: réseau électrique et distribution d'eau, égout et système de drainage.

La construction des pistes a débuté en octobre 1970; celle de l'aérogare des passagers en août 1972. La construction de l'artère principale et de ses échangeurs commencera au printemps. La mise en place de certaines infrastructures est déjà commencée et les travaux s'intensifieront cet été. L'installation des systèmes électroniques et de télécommunications, de même que la construction de la tour de contrôle et des édifices de l'ensemble administratif et commercial commerceront sous peu.

L'implantation du nouvel aéroport dans la



La nouvelle aérogare, qui accueillera dès 1975 près de quatre millions de passagers, comporte une structure de béton.

Ce véhicule-transbordeur, en position élevée, placé près d'un avion AC-747 avec sa passerelle télescopique, forme avec la paroi de l'avion un joint étanche.



sous-région de Montréal ne sera pas sans avoir un impact économique considérable sur tous les plans, tant régional, provincial que national.

Lorsque la première phase de la construction sera terminée, en 1975, le gouvernement fédéral aura investi plus de $400 millions pour la construction de l'aéroport et de services connexes (ce qui comprend le coût de l'acquisition des terrains et les contributions du ministère de l'Expansion économique régionale) alors que le gouvernement provincial aura considérablement investi pour la construction de routes et autres services connexes.

Ces travaux d'infrastructures occuperont quelque 4 000 travailleurs au cours des étés 1973 et 1974; de plus, les activités opérationnelles à l'ouverture du nouvel aéroport emploieront quelque 4 200 travailleurs.

De plus, la mise sur pied des différents éléments d'infrastructure (autant directs qu'indirects) accroît le caractère attractif de la région nord, et influence positivement le potentiel industriel du territoire environnant cet ensemble d'installations.

Les effets bénéfiques ou économiques externes engendrés par la présence de l'aéroport permettent d'envisager qu'idéalement cette région dégagera un climat économique favorable, susceptible d'attirer divers types d'entreprises. Dans l'ensemble, l'impact de ces économies externes est difficile à mesurer et à quantifier avec précision en termes d'emplois et de nombre d'entreprises, à cause de la teneur imprévisible et aléatoire du comportement des industriels à moyen et à long terme.

Les gouvernements fédéral et provincial sont actuellement à étudier les meilleures façons de tirer profit des infrastructures en place. Il y a actuellement, à la zone spéciale, un projet de parc industriel et commercial aéroportuaire et le ministère de l'Expansion économique régionale est à faire l'étude du marché du système de transfert, de distribution et de manufacture. (T.D.M.)



Cette acier d'armature est destinée à la dalle du plancher du réservoir d'eau.

Cette photo illustre éloquemment le gigantesque de cette aérogare dont nous voyons ici le débarcadère intermédiaire.



The Challenging Season

Winter with its changing moods, becomes a nightmarish operation for the Canadian Coast Guard icebreaking fleet, which accepts the challenge of winter, and has won world acclaim from shipping operators who ply the Gulf waters. Winter set in earlier this season along the coast of Labrador and the northeast coast of Newfoundland, increasing the demand for Canadian Coast Guard icebreakers to free vessels caught in harbours and inlets, and to assist in winter emergency supply operations.

There has been a marked increase in demand for escort services in all major waterways and harbours. The Coast Guard supports all shipping in ice-infested waters, provides ships with the best route to their destination, and with icebreaker escort when the worst ice conditions cannot be avoided.

Ice Patrol

Information on ice is obtained from a variety of sources. Aircraft operated by the Atmospheric Environment Service which patrol the Gulf and East Coast daily, monitor ice conditions both visually and by remote sensing. All information is collated by Ice Central Ottawa, then disseminated through coast radio stations as ice forecasts and ice charts via radio façsimile; additional information is posted directly to shipping by Coast Guard and Marine Services at Ice Sydney Halifax, Newfoundland Area Marine Services, St. Lawrence Vessel Traffic Management, the St. Lawrence Seaway Authority and Prescott and Parry Sound Marine Bases Services.

Force Deployment

Throughout the winter, deployment of the Coast Guard forces is shifted to meet the changing demands. The force consists of five heavy icebreakers, one heavy icebreaking cable ship, four medium and one light icebreaker operating in the Gulf and the East Coast. Conditions at times are so severe that the medium and light icebreakers are barely effective. The heavy units are forced to escort convoys of up to seven ships, when the optimal convoy size for heavy ice conditions is only three ships. Delays are then encountered, which sometimes constitutes a real threat to the short and long term viability of some industries.

Economic Navigation

Traffic has increased dramatically in recent years with winter navigation up 85% over the last ten years. Uninterrupted winter navigation, which is relatively recent history, boosts the Canadian economy by millions of dollors every year in terms of increased trade, business, and manpower requirements.

Figures released estimate that a ton of cargo handled by a port is worth about 13 dollars to the economy. Last season 27,000,000 tons of cargo passed through ice-infested waters to and from Canadian Ports. This in terms of Canadian economic benefit is some $600,000,000 and it truly can be said that Canada is receiving extremely high rates of return on the investment she has made in developing winter navigation.

Shipping Responsibilities

Although the proportion of ice strengthened tonnage continues to increase, there are still

many instances during the winter where badly equipped or managed merchant ships are responsible for creating delays throughout the whole system. The experience of the icebreaker *John A. MacDonald* is typical. On one occasion she was forced to take the vessel *Margareta* under tow to Cornerbrook, Newfoundland, as she lacked the power to follow; since the vessel did not have the proper communications, the *John A. MacDonald* had to go along side to deliver a portable VHF radio. Still under tow, the line parted off Steep Island and after reconnection the vessel was finally towed into port. The total time for this operation was 7 hours 25 minutes for an average speed of less than 5 knots. Similar experiences are recorded by all Coast Guard icebreakers, and unless drastic improvements are made, it may be impossible to avoid introduction of regulatory measures to ensure that the government forces are not misemployed, and to stop losses experienced by the remainder of the shipping community.

Ministry's Guide

The Ministry's new Guide on Ice Navigation is now published and will be most helpful in educating commercial interests engaged in winter shipping operations. Also, the Ice Office in Sydney, Nova Scotia has moved into a new building with modern facilities, and will help enhance its efficiency in answering the steadily increasing demands for assistance.

Improved Fleet

While the strain imposed on the Canadian icebreaking fleet continues to increase every year, the Canadian Coast Guard intends to increase its icebreaking capabilities starting this year. The Ministry recently announced plans to build four 15,000 horse-power turbine electric icebreakers in the next ten years. The second part of the program calls for modification of the existing fleet to increase its performance, and thirdly, the design of a true polar icebreaker, which may exceed more than 80,000 horsepower, and which would far exceed the capabilities of the fleet's latest and most powerful vessel, the *Louis St. Laurent*.

The program to increase the Canadian Coast Guard icebreaking fleet involves construction of a new class of heavy icebreakers, capable of operating in the Great Lakes System, Labrador, the Gulf, the St. Lawrence, and the Arctic in summer. At present, the Canadian Coast Guard operates 76 ships, and carries out many major Arctic reconnaissances throughout its busy year.

Futuristic Technology

As a result of trials carried out during the winter months under Arctic conditions, the ATC-100 air cushion transporter broke a half-mile-long path through ice 27 inches thick. Advances made in this area with the hovercraft are among the most exciting in recent history. The Air Cushion Vehicle Division, Ministry of Transport, is studying potential air cushion technology for icebreaking.

In connection with the icebreaking trials, a small interdepartmental working group has been formed by experts from the National Research Council, Department of the Environment, and the Transport Development Agency.

The Canadian Coast Guard and the ACV Division foresee considerable advantage over conventional techniques. The prime advantage is the economy. At Tuktoyaktuk, the ice was broken using only 1,000 horse-power and a working crew of two men. The simplicity of design will allow a larger number of icebreakers to be built for use in Canadian waters.

The vehicle now being used is under contract to the Canadian Government, and trials are being managed by the Air Cushion Vehicle Division, Surface Administration, Ministry of Transport; the Department of Indian and Northern Affairs, and the Department of Public Works.



Winter Operations, unloading part of the 3.62 million tons of cargo at the Port of Halifax; tonnage figures are for the first three months of 1973.



A Canadian Coast Guard helicopter aids one of the many ships that ply Canadian waters during the winter navigation season.

The ACT air cushion transporter breaks ice at Tuktoyaktuk during its winter trials.



La Météo dans la Langue de Molière

L'Ecole des Services de l'Air, ouverte depuis 1960, compte actuellement plus de trois mille anciens étudiants. De ce nombre, 25 pour cent sont des Canadiens francophones appelés à travailler dans un bureau météorologique bilingue. Comme la demande pour un service de météo dans les deux langues officielles du pays se fait de plus en plus grande, il devenait nécessaire aux autorités de poser un geste qui favoriserait la formation de météorologues bilingues. Et c'est ainsi que d'autres cours pourront être donnés uniquement en français.

Le 13 avril dernier devenait, à cet égard, un moment historique pour l'Ecole des Services de l'Air. Ce jour-là, les premiers étudiants à suivre un cours en techniques de météorologie unilingue français recevaient leur diplôme.

Chaque année, environ cent nouveaux techniciens en météorologie terminent leur formation; un nombre identique de météorologues destinés à travailler dans des bureaux plus importants, suivent des cours de perfectionnement.

La section de l'Ecole spécialisée en météorologie compte 20 instructeurs dont cinq bilingues, venant du Service de l'environnement atmosphérique, afin de donner des cours de formation météorologique pour le compte du ministère de l'Environnement, du contrôle de la circulation aérienne et des opérations radio.

Le Service de l'environnement atmosphérique emploie plus de 1 200 techniciens en météorologie qui font leur travail dans 245 stations échelonnées du navire météorologique PA-PA dans le Pacifique à Saint-Jean (Terre-Neuve) en passant par Alert dans l'Arctique et Windsor (Ontario) dans le Sud.

Ces nouveaux diplômés de langue française arrivèrent à Ottawa le 5 janvier. Après un stage de formation de 14 semaines à l'Ecole, les sept nouveaux techniciens en météorologie sont en mesure d'entreprendre une carrière de météorologue dans différentes stations de l'Est du Canada.

Nicole Raymond, une jeune citoyenne de St-Bruno Qué.) qui a obtenu les meilleurs résultats, travaillera au Centre météorologique canadien de Montréal. Pour sa part, le seul diplômé de la Nouvelle-Ecosse, sera à l'emploi de la station de Goose Bay, au Labrador.

Monsieur H. Kruger, chef de la Section des systèmes d'observation au quartier général du Service de l'environnement atmosphérique à Toronto, a remis les diplômes aux sept heureux étudiants. Entre temps, on prépare une nouvelle session de formation de technicien en météorologie qui devrait commencer dans quelques semaines et on fait des plans pour un nouveau cours en français.

Les diplômés du 13 avril sont: Yves-Marcel Brousseau (Sainte-Dorothée, Qué.), Yves Landry (Laval, Qué.), Jacques Lavigne (Montréal, Qué.), Reynald Lirette (Laval, Qué.), Nicole Raymond (Saint-Bruno, Qué.), Gary Vincent Saulnier (Liverpool, N.-E.) et Marcel Saumure (Verdun, Qué.).



Mlle Nicole Raymond, Saint-Bruno (Québec), première de sa classe,reçoit son diplôme des mains de M. Herbert Kruger,chef des Systèmes d'observation, ministère de l'Environnement, Toronto.

Halifax No.19

by Thomas E. Appleton

In the Fall of 1913 the Department of Marine and Fisheries decided to order a new self- propelled steam lightship to mark the outer limit of the Halifax approaches. This lightship, named Halifax *No. 19,* was the last vessel to be built in Britain for the Department. The contract for the hull and machinery went to Boe, MacLachlan & Co. of Paisley, a Scottish shipyard now long defunct, which launched the vessel in February 1914.

The vessel's lantern and optical apparatus was made by the famous French lighthouse engineers, Barbier, Benard & Turenne of Paris. It had been the intention to install the optics at the shipyard but owing to a delay in delivery it was decided to sail the ship without the lantern. This would make for an easier Atlantic passage because the propelling machinery, normally used only for proceeding to and from station, was of modest power. With these arrangements settled the ship was made ready for the voyage, her departure being announced by a letter from the builders which was received in Ottawa on 13th May 1914:

> "We have pleasure in advising you that your new lightship, after very satisfactory trials, left the Clyde for Halifax on the afternoon of 25th. April under the command of Captain MacBeath. ...We hope the *Halifax* will have a safe voyage and that you will find the vessel to your satisfaction."

This letter duly reached the Deputy Minister's desk in the East Block where his initials "A.J." on a brief minute record his instructions that Mr. William McNab should go to Halifax to receive the ship on behalf of the Department. McNab left in plenty of time to be followed by a telegram from Alexander Johnston, the Deputy Minister, requesting that arrangements be made to put the *Halifax* on the marine railway for cleaning and painting as soon as she arrived.

After a few days in Halifax, and with no sign of the ship, McNab was certainly not worried but he sent a telegram to Mr. Johnston in Ottawa:

> "lightship delayed by fog, arrival expected hourly."

So far, if a bit behind expected time of arrival, everything was going according to plan.

Captain MacBeath was a shipmaster of great experience, indeed he was over seventy at the time, who had built up a business in ship delivery and had a good record in contracts which might range from taking a bucket dredger to New Zealand or a river steamer to the Amazon. To such a man delivery of a seaworthy lightship to Nova Scotia was a better proposition than most. The mate, who was slightly older than Captain MacBeath, was a retired master of the British India Steam Navigation Company; there was no lack of expertise on the bridge. Under his contract with the shipbuilders MacBeath signed on the crew who were mostly young men looking forward to a quick trip and passage home to Scotland by passenger liner. The Chief Engineer, John MacKenzie, was the only Departmental employee as he was under contract to stay with the ship for six months while under guarantee, a usual arrangement by which, incidentally, several Scots marine engineers entered Canadian Government service.

Hard experience had taught Captain MacBeath never to risk running out of coal and he called at Queenstown to make sure, a call which Bow, MacLachlan's letter described as".... Unnecessary and contrary to instructions." But the



Dr. Joyce Hemlow, of Liscomb and Montreal, addressing the memorial gathering in St. John's Church.



Thomas E. Appleton, Marine Historian representing the Ministry of Transport, unveiling memorial.

At the Dedication: Chief Officer O. Millard of the CCGS *Alert*, Mr. Byron Laing, of the St. John's Memorial Committee, F.M. Weston, Regional Director, Marine Services Maritimes, and the Rev. Delmont A. Yeo of St. John's Church, Liscomb.



Atlantic takes no heed of instructions and neither did MacBeath who, with seamanlike forethought, put into St. John's, Newfoundland for further replenishment after the ocean crossing. With full bunkers the lightship then sailed on her last lap with expectations of arrival at Halifax about the 23rd. May, 1914.

At dawn that morning, unaware of all this, watchers at Liscomb, Nova Scotia were alarmed to see wreckage, two smashed lifeboats, and some mangled bodies on the rocky shore after a night of wind and fog. As morning came they were able to identify all that remained of *Halifax No. 19*, bottom up on Crook's Ledges, where brief glimpses of red paint were all that showed in the breakers of a heavy sea. Relatives and friends of the crew in Scotland learnt of this sad event from the pages of the *Paisley Express* of 25th May, 1914 which explained that:

> "Crook's Ledges are exposed to the whole force of the Atlantic swell. Little wind was blowing but a heavy sea was running due to the high spring tides. The bodies recovered were scantily clad and it is thought that the ship struck without warning. The big waves swept her on her side and the men ran up from below, not waiting to dress .... the boats' tackle had been cut away from the ship and all the craft were evidently soon capsized in the breakers."

Nine bodies were buried at Liscomb under arrangements made by the Marine Agent of the Department at Halifax, Charles W. Harvey. Captain Joseph Blois, originally of Maitland, N.S., who was in command of the C.G.S. *Stanley* which had been out searching for the missing vessel, attended the funeral with members of his crew. Thus for the time being, the tragedy of the *Halifax* lightship was laid to rest. It had been the intention to place a memorial marker but with the outbreak of the Great War in August that year, Canadians and Millions of others were swept into the maelstrom of trench warfare on the Western Front and the case of the *Halifax* receded from official memory.

But the people of Liscomb never forgot. When in August 1972 a letter was received in Ottawa from the directors of St. Johns United Church Cemetery requesting that the matter be once more reviewed, the Ministry of course honoured the commitment made by their predecessors the Department of Marine and Fisheries fifty-nine years ago.

Under direction of Mr. F. M. Weston, Regional Director of Marine Services, and with the help of his technical staff at Dartmouth, N.S., a handsome block of polished granite has been established in the Liscomb cemetery. The inscription reads:

IN MEMORY OF THE MASTER AND CREW

of

HALIFAX LIGHTSHIP No 19
WRECKED OFF LISCOMB

22 May 1914

WITH THE LOSS OF ALL ON BOARD

Those given up by the sea found
Eternal Rest here

Erected by
The Ministry of Transport

Canada
1973

Suggestion Awards

Primes à l'initiative



Edward L. Leidle, Vancouver, British Columbia, $1,120. Mr. Leidle designed a self-propelled crack router, to facilitate the repair of broken or weakened surfaces in airport runways. Above is J.A. Lenahan, Regional Administrator, Pacific, Canadian Air Administration, with Mr. Leidle, looking over the blueprints for the machine.

M. Edward L. Leidle, Vancouver, (Colombie-Britannique): $1120. M. Leidle a conçu une déblayeuse auto-motrice pour faciliter l'enlèvement des morceaux de revêtement brisé ou en mauvais état sur les pistes d'aéroport. Ci-dessus, M. J.A. Lenahan, Administrateur régional des transports aériens (Pacifique) et M. Leidle regardant les plans de l'appareil.

Thomas Smith, Vancouver, British Columbia, $970. A supplementary award for second year savings. Mr. Smith's original suggestion was to remove backup equipment for the emergency frequency 121.MHz.

M. Thomas Smith, Vancouver (Colombie-Britannique), a reçu une prime supplémentaire de $970 pour les économies qu'il a fait faire au Ministère pour une deuxième année consécutive. M. Smith avait proposé d'enlever l'équipement auxiliaire affecté à la fréquence d'urgence 121. MHz.

Keith Wayne Stratham, Delta, British Columbia, $360. Suggested the decommissioning of 3337KHz and 5390KHz frequencies at several locations.

M. Keith Wayne Stratham, Delta (Colombie-Britannique), $360. M. Stratham a proposé la désaffectation des fréquences 3337Hz et 5390Hz à plusieurs endroits.

Alex Austin, Goose Bay, Labrador, $240. Suggested modification to the midship shaft housing bolts of the Sicard Snow Blowers.

M. Alex Austin, Goose Bay (Labrador), $240. M. Austin a proposé la modification des boulons de l'enveloppe de l'arbre central des chasse-neige Sicard.

Delaine Ross Reid, Richmond, British Columbia, $650. Suggested an improved method of handling urea (chemical de-icer), by using a 4" grain auger to load the distributor.

M. Delaine Ross Reid, Richmond (Colombie-Britannique), $650. M. Reid a proposé une méthode améliorée de chargement de l'urée (produit chimique anti-verglas) dans le distributeur.

Suggestion Awards (cont'd)

G.L. Hoy, Fort Nelson, B.C., $20.

Charles L. Smith, Ottawa, Ontario, $15.

Cyril R. Dicks, Port Hawkesbury, N.S., $20.

Stephen Wenslawek, Ottaw, Ontario, $20.

Leonard C. Kieser, Whitehorse, Y.T., $40.

Samuel Nield, Fort St. John, B.C., $40. David S. McMillan, Port Hardy, B.C., $20.

James M Tycquet, Port Hardy, B.C., $60.

George A. Kuxhaus, Saskatoon, Sask., $60.

Herman M. Crewe, Lewisporte, Newfoundland, $40.

James Ballantyne, Burnaby, B.C., $20.

Frank L. Carter, Vancouver, B.C., $60.

Robert B. Collie, Terrace, B.C., $40.

Lucienne Webb, Ottawa, Ontario, $145.

Beatrice G. Bottema and Mr. Leroy S. Ward, Ottawa, Ontario, $100. each.

George H. Powell, Timmins, Ontario, $60.

Lyle Arthur Douglas Black, Brampton, Ontario, $40.

Alvin A. Oja, Sault Stel Marie, Ontario, $50.

W.A. Blades, Halifax, N.S., $150.

Terry F. Rea, Penticton, B.C., $40.

Primes à l'initiative (suite)

Carl C. Mageran, Sault Ste. Marie, Ontario, $90.

James Henderson, Penticton, B.C., $20.

Sam Salvatore Sirna, Victoria, B.C., $100.

C. Tracy MacFarlane, Moncton, N.B., $150.

Ronald Slemko, Ft. McMurray, Alta., $20.

George E. Aubut, Montreal, Quebec, $50.

Edward W. Scammell, Gravenhurst, Ontario, $30.

Gerald C. Baker, Watson Lake, Y.T., $50.

Bruce Cameron, Mississauga, Ontario, $20.

William D. Skelhorne, Burnaby, B.C., $150.

William Robert Wootton, North Bay, Ontario, $20.

William H. Lee and Mr. Joseph M.J. Beaudin, Iroquois, Ont. $90.

John Douglas Griffith, Stonewall, Manitoba, $75.

Stanley W. Walker, Calgary, Alberta, $50.

Gordon C. Large, Ottawa, Ontario, $20.

Jan Kootte, Comox, B.C., $100.

John W. Frederick, Manotick, Ontario, $60.

Murray Grahan, Sault Ste. Marie, Ontario, $20.

miss transport contest

concours mlle. transports



Miss Transport, Isabelle Johnston, and her cortege. Left to right are, Lorelei Carey, Mary Showers, Lise Chartrand, Dian Boulay, Jan Reinburger, and Judy Powell. The girls highlighted the Las Vegas night, April 13th. Miss Transport will now be one of the contestants for the Miss RA title.

Mademoiselle Transports, Isabelle Johnston, et son cortège. De gauche à droite, Mlles Lorelei Carey, Mary Showers, Lise Chartrand, Diane Boulay, Jan Reinberger et Judy Powell. Les jeunes filles ont rehaussé de leur présence la soirée "Las Vegas" qui a eu lieu le 13 avril. Mademoiselle Transports posera maintenant sa candidature au titre de Mademoiselle AR.



Minister of Transport Jean Marchand ponders over the choice of goodies during a break in festivities.

M. Jean Marchand, ministre des Transports, se demande ce qu'il va choisir parmi toutes ces bonnes choses pendant un moment de répit de la fête.

SOIRÉE 'LAS VEGAS' NIGHT

Winners all, losers none, but guess who won?

Tous gagnent et personne perd; toutefois le véritable gagnant demeure un point d'interrogation.



People in the News

Ceux qui ont fait les manchettes



Transport Minister Jean Marchand views Coal Harbour and West Vancouver, from the window of a Canadian Forces helicopter during his recent tour of Vancouver.

Ross Kenward, Province Photograph.

Le ministre des Transports, Monsieur Jean Marchand, jette un coup d'oeil sur West Vancouver et Coal Harbour, alors qu'il survole Vancouver à bord d'un hélicoptère des Forces canadiennes. Photo de Ross Kenward du Province Photograph



To face the challenge of expansion, the Telecommunications and Electronics Branch, Ministry of Transport, has devised a training program to keep electronic technicians/technologists and engineers up-to-date. The overall objective of this training program is to train some 450 Telecommunications and Electronics Branch maintenance and installation employees in the operational computer systems which will be installed between 1973-1976.

E.F. Porter, (left) Director Telecommunications and Electronics Branch, Ministry of Transport, presents graduation certificate to R. W. L. Atkins, (right), top student on the course, and Computer Standards Officer for the Ontario Region, with O.E. Brown, Telecom Faculty Manager (centre).

Pour faire face à une expansion, la Direction des télécommunications et de l'électronique a mis au point un programme de formation en trois parties pour permettre aux ingénieurs, aux technologues et aux techniciens en électronique de se tenir au courant des progrès techniques. Ce programme a pour but principal de former 450 employés qui seront préposés à l'installation et à l'entretien des systèmes d'exploitation par ordinateur devant être mis en service entre 1973 et 1976.

M. E.F. Porter (à gauche), Directeur des télécommunications et de l'électronique, présente son diplôme au premier du cours, M. R.W.L. Atkins (à droite), agent aux normes d'ordinateur de la région de l'Ontario, en présence de M. O.E. Brown, directeur de la faculté des télécommunications (au centre).

Flight Plan Process

Traitement des plans de vol



V.F.R. Flight Plan Process project held a three day seminar in Calgary, which honed the talents of Telecommunications Area Managers to assume the responsibility of processing flight plans, on a test basis for six months.

The group included representatives from across Canada. Left to right are: Back Row — S. Stewart, Winnipeg; I. Pitz, Medicine Hat; N. Harvie, Calgary; T. Goldie, Moncton. Second row — V. Peterson, Red Deer; M. Kelly, Calgary; J. Stewart, Toronto; G. Browne, Cranbrook; R. Webb, Saskatoon; J. McAreavy, Calgary; J. Swatkoff, Lethbridge, J. Doan, North Bay; M. Zwicker, Medicine Hat. Front row — P. Kierans, Montreal; H. Burton, Edmonton; A. Wieliczko, Edmonton; J. Ito, Edmonton, D. Bertch, Edmonton; R. Travers, Calgary.

L'équipe du projet de traitement des plans de vol VFR a tenu un colloque de trois jours à Calgary au cours duquel les directeurs de zone des télécommunications ont été chargés du traitement des plans de vol, à titre d'essai pour une période de six mois.

Le groupe comprenait des représentants venus de les régions du Canada. De gauche à droite: dernière rangée — S. Stewart, Winnipeg; I. Pitz, Medicine Hat; N. Harvie, Calgary; T. Goldie, Moncton. deuxième rangée — V. Peterson, Red Deer; M. Kelly, Calgary, J. Stewart, Toronto; G. Browne, Cranbrook; R. Webb, Saskatoon; J. McAreavy, Calgary, G. Swatkoff, Lethbridge; J. Doan, North Bay; M. Zwicker, Medicine Hat. première rangée — P. Kierans, Montréal; H. Burton, Edmonton; A. Wieliczko, Edmonton; J. Ito, Edmonton, D. Bertch, Edmonton; R. Travers, Calgary.

RETIREMENTS... RETRAITES...



Double retirement. Personnel History Cards were the responsibility of Mrs. Anderson, who for 30 years kept the cards up-to-date in the Marine Personnel Branch, Ministry of Transport. Artistic and organizational abilities are two of the many attributes of Allen Vincent O'Farrell, who recently retired from the Ministry of Transport, Marine Services, as Personnel Administrator.
Making the presentation to Mr. O'Farrell is Jean Chandonnet, Director of Personnel Marine, with Mrs. M. Anderson, (centre).

Deux fonctionnaires des Transports prennent leur retraite. Mme Anderson s'occupait des fiches de renseignements personnels qu'elle a tenues à jour pendant 30 ans à la Direction du personnel de la Marine. Les aptitudes pour les arts et l'organisation sont deux des nombreux talents de M. Vincent O'Farrell qui a récemment pris sa retraite des Services de la marine du ministère des Transports, en qualité d'administrateur du personnel.
M. Jean Chandonnet, Directeur du personnel de la marine, présente un souvenir à M. O'Farrell, en présence de Mme M. Anderson (au centre).



Two retirees from the Central Region Finance Branch, Winnipeg, representing a total of 66 years service with the Ministry of Transport. Harry Rayner retired as Regional Financial Officer, and Edra Lund as senior travel removal clerk. Edra, and Harry, receive their long service scrolls from, R. H. Newell, (left), Regional Personnel Administrator.

M. Harry Rayner et Mlle Edra Lund, respectivement agent régional des finances et commis principal aux frais de voyage et de déménagement, viennent de prendre leur retraite de la Direction des finances de la région du Centre. A eux deux, ils totalisent 66 années de service au ministère des Transports.

Mlle Lund et M. Rayner reçoivent leur certificat de long service des mains de M. R. Newell (à gauche), administrateur régional du personnel



Reg Austin, Telecommunications Station Manager, Yarmouth Marine Air Radio Ministry of Transport, has retired. Reg was described during his farewell dinner as a man who has devoted 43 years of his life towards making the Ministry of Transport "number one."
Reg with Mrs. Austin, holds his long service certificate signed by Prime Minister Trudeau

M. Reg Austin, Directeur de la station de télécommunications maritimes et aériennes du ministère des Transports à Yarmouth, a pris sa retraite. Au cours du dîner d'adieu organisé à cette occasion, un ami de M. Austin lui a rendu hommage pour "avoir consacré 43 ans de sa vie à maintenir le ministère des Transports au premier rang".

M. Austin en compagnie de son épouse, tenant son certificat de long service signé par le Premier ministre, M. Pierre Elliott Trudeau



Double retirement. Larry Desloges, after 43 challenging years, and Marie Starsfield, a long time co-worker of Mr. Desloges, retiring from Transport, (Accounts Payable Supervisor). Presentations were made by R.J.D. Brown, Director Material Management, (right) with Mrs. Desloges on the left.

M. Larry Desloges, surveillant des comptes à recevoir, a pris sa retraite du ministère des Transports après 43 ans de loyaux services, en même temps que sa collaboratrice de longue date, Marie Starsfield.
M. R.J.D. Brown, directeur de la gestion du matériel (à droite), a prononcé le discours d'adieu, en présence de Mme Desloges (à gauche).

Retirements (cont'd)

George Daniel Titterton, Victoria, B.C. April 24, 1973.

William Fern Fullerton, Banfield, B.C. May 5, 1973.

Ernest James Hill, Victoria, B.C. June 8, 1973.

Robert McLennan, New Westminster, B.C. April 7, 1973.

Dennis William Miles, Victoria, B.C. February 23, 1973.

Ronald E. Buss, Edmonton, Alta. March 31, 1973.

C.E. Marcelle, Winnipeg, Manitoba. June 1, 1973.

Marven J. McNally, Cumberland County, N.S. April 27, 1973.

Roy Joseph Gallant, St. Dieppe, N.B. March 3, 1973.

Wilfred John Bradbury, Gander, Newfoundland. March 19, 1973.

Edward Francis Beehan, St. John's, Newfoundland. March 8, 1973.

Retraites (suite)

M. George Daniel Titterton Victoria (C.-B.) 24 avril 1973.

M. William Fern Fullerton Bamfield (C.-B.) 5 mai 1973

M. Ernest James Hill Victoria (C.-B.) 8 juin 1973.

M. Robert McLennan New Westminster (C.-B.) 7 avril 1973.

M. Dennis William Miles Victoria (C.-B.) 23 février 1973.

M. Ronald E. Buss Edmonton (Alberta) 31 mars 1973.

M. C.E. Marcelle Winnipeg (Manitoba) 1er juin 1973.

M. Marven J. McNally Cumberland County (N.-E.) 27 avril 1973.

M. Roy Joseph Gallant St. Dieppe (N.-B.) 3 mars 1973.

M. Wilfred John Bradbury Gander (Terre-Neuve) 19 mars 1973.

M. Edward Francis Beehan Saint-Jean (Terre-Neuve) 8 mars 1973.

SUGGEST...

GOOD IDEAS can earn MONEY!

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Suggestion Award Program
Ministry of Transport
Place de Ville
Ottawa, K1A 0N8

(See reverse side – Voir au verso)

Signature Date

NAME AND ADDRESS

NOM ET ADRESSE

CLASSIFICATION
BRANCH – DIRECTION
LOCATION – LIEU
REGION – RÉGION
SIN No – NAS

HOW TO IMPROVE YOUR SUGGESTION

IDENTIFY THE PROBLEM.

Obtain the facts.

Write it out in detail. (If it is a modification to equipment, use the format in maintenance manuals if possible.)

Provide a sketch or drawing.

Estimate savings:
e.g.,How long does job take with present method? How long with your proposed method?

Provide photographs, if applicable.

Enclose samples of forms.

Send your suggestion to:

Co-Ordinator,
Suggestion Award Program,
Ministry of Tranport,
Ottawa, Ont.

K1A ON8 (Air)
K1A ON7 (Marine)
K1A ON5 (Administration)

Eligibility and awards in accordance with Incentive Award Board Regulations.

COMMENT MIEUX PRESENTER VOS SUGGESTIONS

IDENTIFIEZ LE PROBLEME.

Réunissez les faits.

Mettez-les par écrit et donnez des détails. (S'il s'agit d'un changement à apporter à une pièce d'équipement, utilisez la formulation des manuels d'entretien si possible)

Annexez un croquis ou un dessin.

Evaluez les économies possibles:
ex.Combien de temps faut-il pour effectuer le travail avec la méthode actuelle? Combien de temps faudra-t-il avec votre méthode?

Annexez des photos, s'il y a lieu.

Joignez des exemplaires des formules.

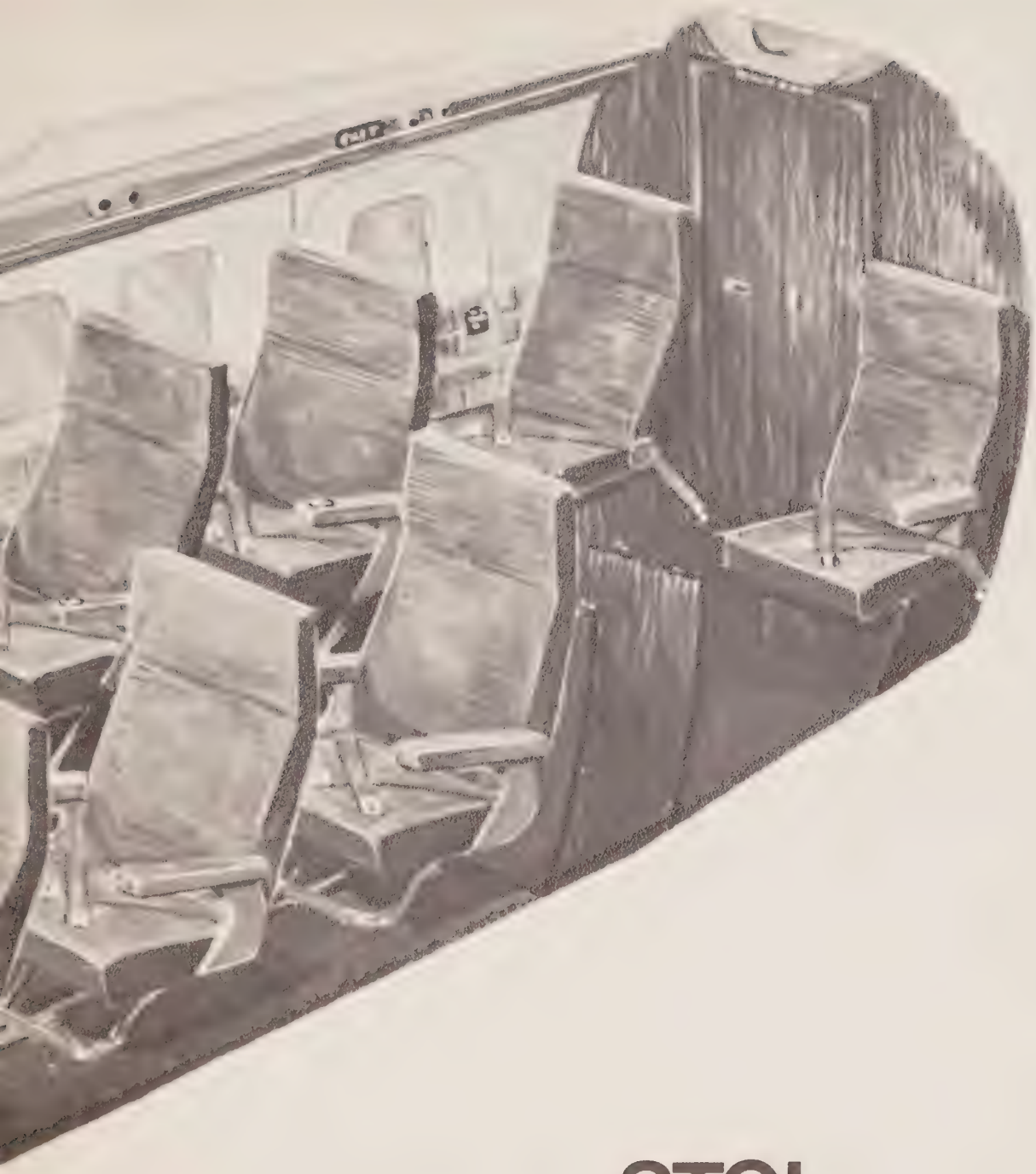
Envoyez vos suggestions au:

Coordonnateur
Programme des primes à l'initiative
Ministère des Transports
Ottawa (Ontario)

K1A ON8 (Air)
K1A ON7 (Marine)
K1A ON5 (Administration)

L'admissibilité et les primes sont établies en vertu du règlement du comité des primes à l'initiative.

TEAR – LINE



STOL DEMONSTRATION AIRCRAFT

Cabin Layout

Virgin

TL
T61

transport canada

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july-august-1973-juillet-août

contents-sommaire

Title page — page des titres 1

Transport Council — Conseil des Transports 2

Transport Council Message — Message du Conseil des Transports 3

"Hybrid" design for Calgary 4

Welland By-Pass Channel 7

Mikula What's in a Name 14

How the chief lost his "ticket" 18

Accident Research 20

Quebec beautiful port — A Québec beau port 21

Coast Guard graduation — collation des diplômes au Collège de la Garde côtière 23

Merit Awards — primes au mérite 25

People in the news — ceux qui ont fait les manchettes 28

C.C.G. Radar Navigation Course — Cours de navigation de la Garde côtière 29

M.O.T. picnic — pique-nique des employés du Ministère 30

Suggestion awards — primes à l'initiative 32

Retirements — à la retraite 33

Steamship Inspection Montreal 35

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Rédacteur francais Jean-Louis Bibeau

Vous pouvez reproduire les articles de cette revue en ayant le soin de mentionner TRANSPORT CANADA comme votre source d'information.

Front Cover **Transport Canada**

An artist's rendition for an air terminal complex and associated phased future development for Calgary International Airport.

La conception artistique de l'aérogare et de son expansion prévue à l'aéroport international de CALGARY

transport canada



E.J. Benson



O.G. Stoner



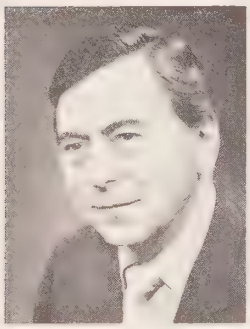
Hon. Jean Marchand



G.A. Scott



M.D. Armstrong



J. Guay

TRANSPORTATION COUNCIL



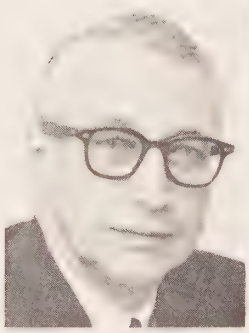
J.Y. Clarke



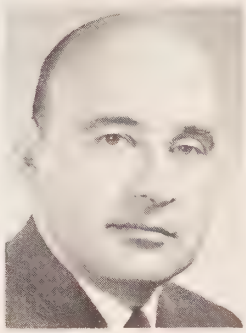
J.M. Favreau



Mel Hagglund



W.H. Huck



Pierre Camu

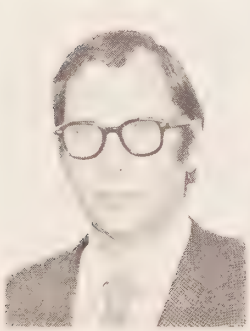


W.M. Gilchrist

CONSEIL DES TRANSPORTS



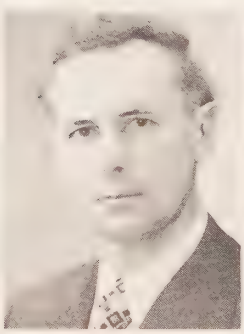
C. C. Halton



W.F. Nelson



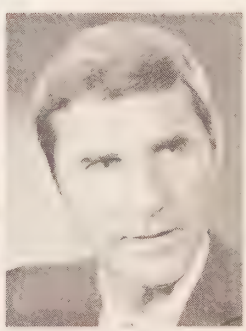
Robert Turner



Roy Illing

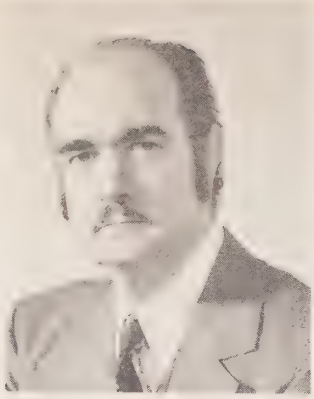


John Gray



Andre Laframboise

TRANSPORTATION COUNCIL MESSAGE



Del Taylor

The National Harbours Board now has a Regional Office in each of the Atlantic, St. Lawrence, Central and Pacific Regions, with a resident member responsible within the Board for administration and general supervision. The Board holds the view that a national transportation policy as it affects ports, should be consistent with, and complementary to provincial and local transportation programs.

The selection by the Minister of Transport of members for Port Authorities has provided the basis for advice and counsel on local affairs, but also, of increasing importance, on the regional and national levels. The National Harbours Board now meets officially with these Port Authorities directly, in the municipalities where there are facilities under its administration. A business office has recently also been opened in Winnipeg and this serves marketing interests in the national and international trade. Services and information to support local efforts are thereby readily available to the Pacific Coast ports and the Lakehead and Churchill.

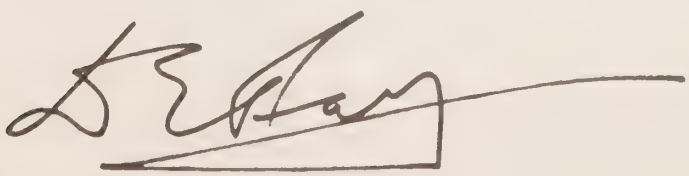
This country's capacity to provide efficient port service is a significant part of the transportation network on which the economic stability of Canada's regions depends. The acceptance and recognition of these same ports enhances Canada's reputation and opportunity on the world trading scene. The Board will continue to direct its policies with these objectives in mind.

MESSAGE DU CONSEIL DES TRANSPORTS

Le Conseil des ports nationaux a maintenant un bureau régional dans les régions de l'Atlantique, du Saint-Laurent, du Centre et du Pacifique. Un membre est à la tête de chaque bureau et s'occupe de l'administration et de la surveillance générale des affaires portuaires au nom du Conseil. Le Conseil est d'avis qu'une politique nationale de transport doit être compatible et complémentaire avec les programmes provinciaux ou locaux de transport en ce qui concerne les activités portuaires.

Du fait que le choix des membres des administrations portuaires relève du ministre des Transports, il est plus facile d'obtenir des conseils sur les activités locales et, les relations entre les niveaux national et régional ont pris une plus grande importance. Le Conseil des ports nationaux organise des rencontres officielles avec les administrations portuaires dans les villes où elles exercent leur autorité. En outre, un bureau d'affaires vient d'être créé à Winnipeg en vue de promouvoir la mise en marché au niveau du commerce national et international. De ce fait, les ports de la côte du Pacifique, ceux de la partie ouest des Grands Lacs et le port de Churchill peuvent avoir un accès plus facile à des services et à des renseignements qui seront utiles aux activités locales.

La possibilité de fournir des services portuaires efficaces constitue un aspect important du réseau de transport sur lequel repose la stabilité économique des régions du Canada. La reconnaissance de l'efficacité des services portuaires contribue à établir la réputation du Canada et à améliorer sa position dans le domaine du commerce international. Le Conseil continuera d'orienter sa politique en fonction de ces objectifs.



'Hybrid' design for Calgary terminal

'Hybrid' is the most appropriate word to describe the design for the new $58 million terminal to be built at Calgary. First phase completion of the terminal is targeted for 1976. In order to meet the variety of existing and anticipated flight requirements at the airport, an integrated mixture of terminal concepts was conceived. The resulting 'hybrid' design met with the approval of everyone involved, the City of Calgary, air carriers and pilots.

Basically, the three accepted fundamental passenger handling concepts are: remote gate, walk through and linear.

The decision to develop the hybrid concept was based on the fact that 90% of Calgary's airport traffic is domestic, while only 10% is international and trans-border. In addition, a large proportion (25%) of the passengers arriving and departing from the airport are 'in transit' or on board aircraft which are stopping for other passengers and fuel.

This type of plane stop requires a quick turn around capability wich means that the aircraft will only be at the terminal for 20 to 40 minutes. The type of transient visit does not lend itself to the 'remote gate' terminal concept in which the aircraft parks away from the terminal and the passengers are transported between the plane and the terminal on special mobile waiting rooms.

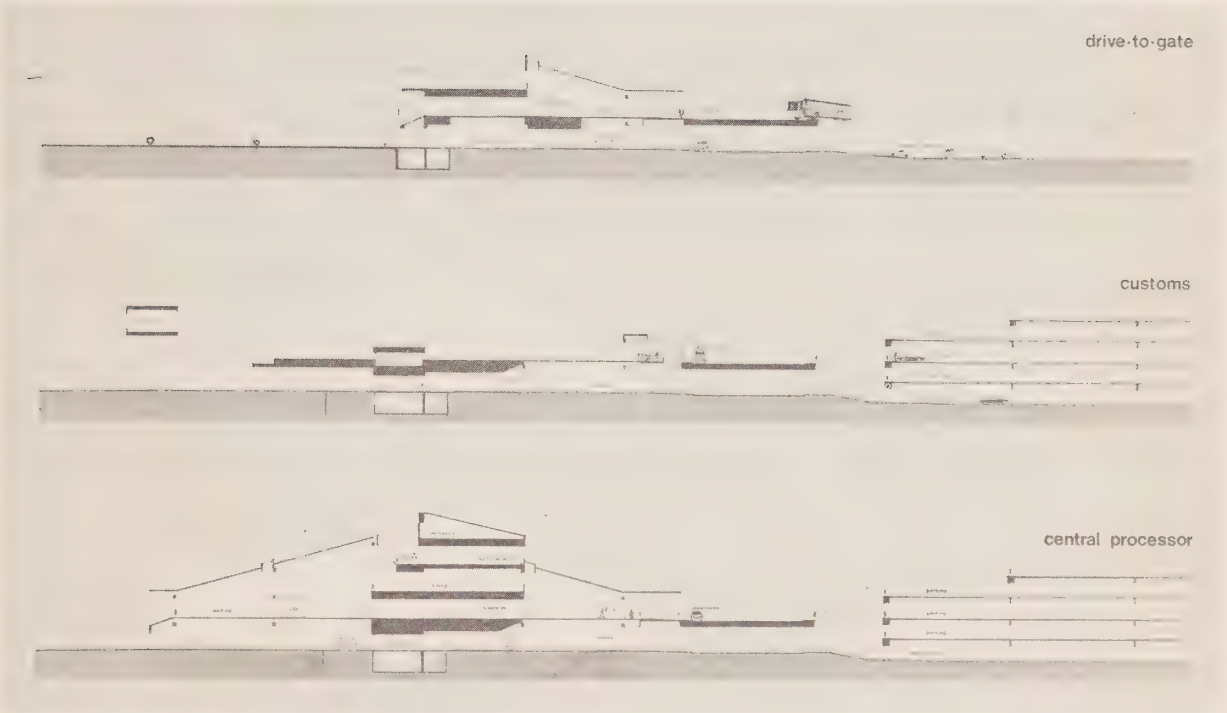
Flexibility is one of the key factors being designed into the new terminal. The curved layout of the main terminal allows for efficient expansion of the facilities. By building a terminal just big enough to handle traffic anticipated for the next five years, the problem of 'over-building' is avoided, as well as the possibility of being trapped by technological change. Expansion of the terminal is planned to take place in five year



Departure level Air Terminal Building.

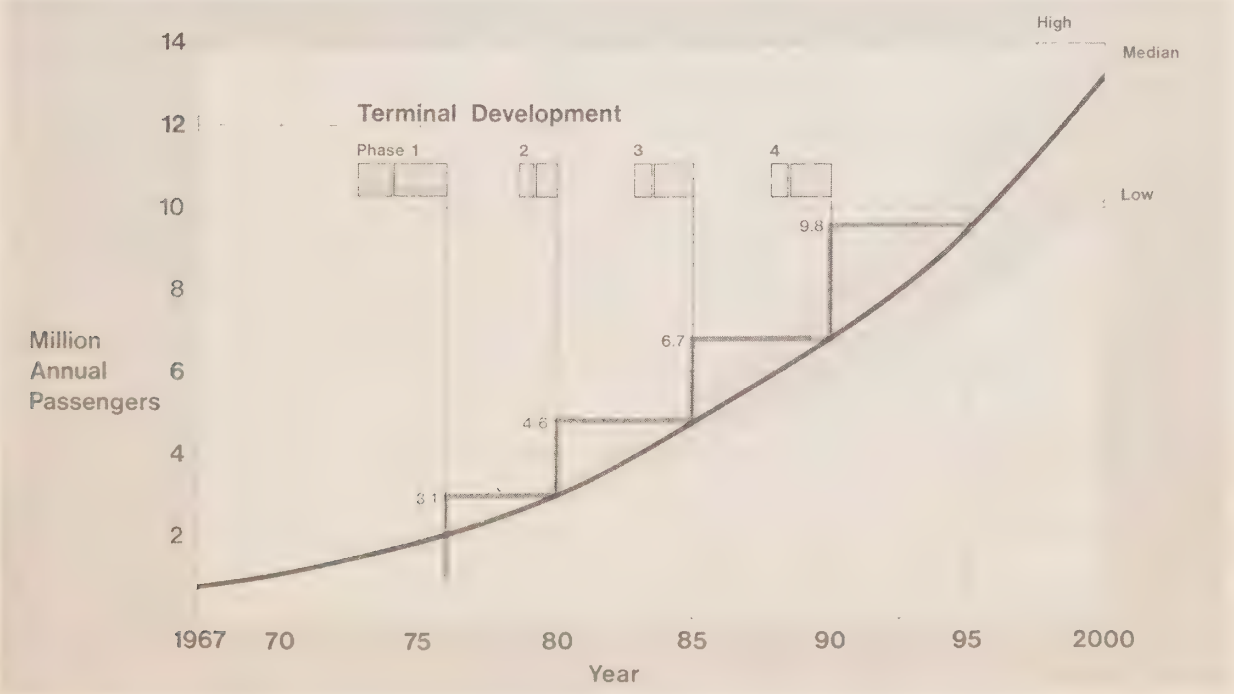
Calgary International Airport Site Location.





Sections of the new Air Terminal Building.

Passenger and Terminal Growth to the year 2,000.



increments, which will allow for changes in design requirements as well as offering the option of either moving ahead earlier if the traffic flow increases more quickly than anticipated, or delaying succeeding phases if development is not as rapid as expected.

Calgary airport handled more than a million passengers last year. Air bus operations between Calgary and Edmonton accounted for 26% of this traffic. Experts anticipate that by 1976 the annual traffic flow will reach two million. The design of the terminal is geared to expand to meet the anticipated growth of passengers to the year 2,000 and beyond.

A dramatic increase in freight is also forecast, expanding from 11,197 tons of cargo and mail in 1970 to an anticipated 246,900 tons by 1990.

The project, which has been already developed in its conceptual stage, is under way in the design state. The complex will consist of a new air terminal building, services building, a parking structure, roads, aircraft aprons, taxiways, and ancillary items required to provide a modern air facility in the jet age. It is expected that private enterprise will add other air-oriented facilities in the terminal area, such as cargo facilities, U-Drive garage, food catering facilities, etc.

The Province of Alberta and the City of Calgary have given assurances that airport operations will be protected by zoning restrictions which are required before construction can begin.

The Air Terminal Complex will be built on the northeast side of the present International Airport, in a location that will allow practically unlimited expansion. The site will have excellent road access from two directions, providing rapid and easy access to the terminal.

The Concept consists of a "hybrid" arrangement, combining a centralized walking terminal with a drive-to-gate (or linear) terminal, on a 2-level road system. A structural car parking facility, also to be built in phases to match the air terminal capacity, will improve the lot of the travelling public, who utilize private motor vehicles to travel to and from the airport. A centralized inspection services facility, to house customs, immigration, health and agricultural inspection staffs, will handle the growing number of foreign travellers, or travelling citizens.

The Ministry of Transport expects the new Air Terminal will represent the most efficient facility to meet the specific needs of the air traveller using the Calgary Airport to the turn of the Century. The Ministry recognizes and appreciates the planning contributions made by the Province, the City of Calgary, the user airlines, the air industry and the general public.

As the air industry expands, the importance of the modern international airport as a service facility and economic generator grows in the community. The Ministry of Transport is recognizing the importance of the Calgary International Airport in its plans, which encompass a planning period of more than 20 years.

The Government's 'User-Pay' Policy, whereby airport users will provide the revenues necessary to off-set the very high costs of constructing, operating and maintaining the airport and air terminal facilities, will be applied to the extent found practicable. The costs will be recovered through normal fees and charges.

The "hybrid" design chosen for the Calgary International Airport Terminal Complex is the one which will best meet and serve the varying requirements of the air travelling public using the services offered by the Air carriers and the Ministry of Transport.

WELLAND BY-PASS CHANNEL

Another link in Canada's marine history was forged July 14, 1973, when the Hon. Jean Marchand officially opened the new 8.3 mile section of the Welland By-Pass Channel. Officials on hand to assist the Minister included Hon. John Munro, Minister of Labour, Dr. Pierre Camu, Administrator of The Canadian Marine Transportation Administration and President of the St. Lawrence Seaway Authority, and 450 delegates from PIANC, the Permanent International Association of Navigation Congresses, composed of marine specialists from more than 40 countries meeting in Ottawa.

Of all the improvements and innovations brought to the St. Lawrence Seaway since its official opening in 1959, none has attained the magnitude of the $188 million Welland By-Pass Channel, transited for the first time at the beginning of the 1973 navigation season.

The history of the Welland Canal is primarily a sequence of engineering achievements of which the new Welland By-Pass is the most recent.

It is almost 144 years since the sirst ship, a schooner, performed the formidable feat of climbing the Niagara escarpment through the wooden locks of the first Welland Canal, thus circumventing the obstacles posed by the Niagara Falls. In the intervening years, the story of the canal has been a chronicle of man's struggle against nature, of his overcoming seemingly insurmountable odds in order to provide shipping with this 27-mile link in the St. Lawrence-Great Lakes waterway.

There have been four Welland Canals since William Hamilton Merritt first dug his spade into the fertile soil of the Niagara Peninsula in the fall of 1824. His first canal required 40 locks and the tiny schooners of his day were dragged by teams of horses and oxen from Port Dalhousie, up the escarpment and into the Welland River at the summit.

Since then the canal has been redug, modernized, widened, deepened and rerouted. Today the new By-Pass offers the fleet of 730-foot lakers and the world's ocean vessels a relatively straight course along which obstructions such as bridges, narrow passing areas and other navigational hazards have been reduced to a minimum. In the past century, the number of locks dotting the channel shrank from forty to eight.

The numerous improvements to the canal — and to the other locks and channels of the St. Lawrence Seaway — have all been carried out as a result of the popularity of the system and the need to meet the ever increasing demands of Great Lakes shipping. In other works, the evolution of the Welland Canal has kept pace with the growth of water transportation throughout the years.

William Hamilton Merritt's canal was used only from 1829 until 1845, when its 40 timber



Steam and Sail traverse the third Welland Canal in the 1890's.

locks, each 110 feet long, 22 feet wide and 8 feet deep were found to be inadequate. The industrial revolution had reached the Welland! The sight of beautiful sailing vessels slowly being towed along the canal would soon be gradually replaced by the belching smoke and tooting whistles of steamers.

When the first canal opened, in 1829, schooner captains were forced to pilot their ships through the Welland River to Chippawa, thence southward along the Niagara River in order to reach Lake Erie. The entry into the Niagara River was made treacherous by the unpredictable currents created by the Niagara Falls and the boiling rapids below. In order to eliminate this hazardous part of the hourney, it was decided to push the canal south from Port Robinson to what is now Port Colborne.

This new section, opened to shipping by 1833, included a narrow, meandering 9.1 mile-long channel from Port Robinson to Ramey's Bend. It is this stretch, part of which winds through the City of Welland, which now is replaced by the By-Pass.

Construction of the second canal began in 1842. The 40 primitive locks were reduced to 27 by increasing the lift of each. The new locks were built of cut stone and were each 150 feet long and 26 1/2 feet wide, with 10 feet of water on the sills. Since work on the St. Lawrence canals was also in progress, it soon became possible for 140 foot-long vessels to sail from Montreal to the Upper Great Lakes.

With Confederation, in 1867, ownership of the Welland Canal, which had first passed from private hands to the Province of Ontario, devolved on the Federal Government. Acting on the recommendations of a canal commission reporting on the general conditions of the Welland, the Government undertook a series of major improvements. The work, started in 1871 and completed in 1887, considerably increased the capacity and efficiency of the canal. The northern section of the channel was straightened and rerouted, one lock was eliminated and the entire canal deepened to 14 feet. Of the remaining 26 locks, some were extended to 270 feet with a width of 45 feet while others were built to this size for the rerouted channel around St. Catharines. The structures of this third canal were a perfect example of the fine skill of the stone masons who erected them and the few sections that have been allowed to stand to this day are a silent tribute to their art. However, "The New Canal", as it was then known, like its two predecessors, was soon doomed to obsolescence by the thrust of Progress — the industrial growth of the North American hinterland which resulted in unprecedented demands on water transportation. Even before the completion of the third canal, vessels built in Great Lakes shipyards were too large to pass through the locks and were restricted to interlake shipping while their cargoes of eastbound grain and ore had to be transferred to rail or smaller canal-sized vessels. The situation called for action and, as early as 1907, plans were being formulated for the fourth canal. Work began in 1913, was interrupted by the First World War and was finally completed in 1932. The 26 locks were replaced by 7 larger lift locks, each 30 feet deep, 80 feet wide with a minimum 859-foot length; and an eighth lock, the guard gate at Port Colborne, which is 1,380 feet long and, until recently, was the largest lock in the world. The $132 million investment required to defray the cost of these major improvements opened the way to increasingly larger vessels culminating in a fleet of huge "730's" which has grown from five vessels, in 1960, to 38 in 1972.

The new canal, still considered one of the finest engineering feats of the first half of this century, was integrated with the St. Lawrence Seaway system in 1959. Its operation and maintenance then became the responsibility of the newly created St. Lawrence Seaway Authority.



Construction of lock No. 8 of the fourth Welland Canal, August 1928.

The 1,000-foot long Welland Dock was built on the west side of the new channel for the use of the City of Welland and its industries. It was designed so that railway access could be easily connected to it.



Let us now look at the practical and technical factors which have led to the planning and construction of the Welland Canal By-Pass:

By the early 1960's, both water and land traffic had grown to such an extent that the Welland Canal became a true bottleneck. Ships were taking as long as 46 hours to transit the canal while, at times, some 50 vessels were lined up in the lakes awaiting entry for hours or even days. Vehicular and rail traffic fared no better as movement was constantly interrupted by long waits at the lift bridges.

Strong complaints and criticisms were voiced and pressures exerted for remedial action. The Dominion Marine Association, in particular, was highly critical of this section of the canal, claiming that the various bridges, insufficient width and sharp curves presented dangers to navigation, especially with the increasing number of 730-foot lakers inching their way through it. A railway swing bridge, which has been hit as many as six times in one season, came in for special criticism. Its centre pier limited these 75-foot wide ships to two narrow navigable lanes, 92 feet wide on one side, 102 feet on the other — a situation which brought considerable risks to both vessels and crews.

At the same time, the City of Welland was pressing for the building of a four-lane highway tunnel under the old canal to relieve traffic congestion and tie-ups at the five vertical lift bridges in the city. As traffic increased on the canal, these bridges were in the "up" position more often and for longer periods and motorists were becoming more and more frustrated with the delays.

The St. Lawrence Seaway Authority had no alternative. Drastic measures had to be taken if the Welland Canal were to continue providing safe, fast and economical transits to modern shipping. Without delay, the Authority proceeded with the engineering plans necessary for twinning the five single locks. Locks 4,5, and 6, the famous flight locks that lift vessels 120 feet up the escarpment had been twinned for two-way traffic when they were originally built and it was felt that twinning the remaining locks would speed up traffic and provide added efficiency. However, before construction could start, conditions on the Welland had deteriorated considerably and it appeared doubtful that the lock twinning program would supply the best solution to the congestion problem

Authority engineers also studied the possibility of modernizing the Welland section of the canal. However, the improvements they envisaged would have left the canal with basically the same alignment and with little or no change where city development and existing structures crowd along the banks of the canal.

By 1964, the situation having become almost intolerable, consultants were hired to study the canal and to make recommendations aimed at increasing the canal's capacity and reducing transit times and waiting queues.

As a result, the Authority entered into a $65 million program of canal alterations and traffic control innovations that increased the canal's capacity by about 35 per cent and reduced transit time from 46 to 22 hours. These notable improvements were achieved without rebuilding the lock system.

The consultants' report offered two solutions to the Welland dilemma — that the lock twinning project be abandoned in favor of a new system of fewer and larger locks and that the winding sectionthrough the City of Welland be replaced by a new channel to be built east of the city. The feasibility of both proposals was studied by Authority engineers and particular attention was paid to the Welland By-Pass suggestion. Five vertical lift bridges and a railway swing bridge were directly responsible for the mounting navigation and traffic problems in the Welland area. Furthermore, it was established that, should future shipping growth necessitate the building

of a larger and more efficient canal, this section would become obsolete and its expansion literally impossible. And so it was decided to recommend to the government that a new channel, by-passing the City of Welland to the east, be constructed.

Three different possible by-pass routes were studied by Seaway engineers. The two alternatives they rejected would have been much more expensive and difficult to build without offering any distinct advantage over the chosen route which runs in a relatively straight line south from Port Robinson to Ramey's Bend.

Shortly after the government formally approved the relocation project, in May of 1966, the Authority bought or expropriated the 6,500 acres of land required by the new route and work started on clearing this land of all buildings and obstructions. By the summer of 1967 the giant task was underway.

The main channel required the removal of some 65 million cubic yards of earth, clay, rock and silt. Excavation was performed in sections, with earthen "plugs" or dykes which served the dual purpose of retaining the waters of the old channel and allowing uninterrupted rail traffic on three of the five lines crossing the work site.

The new By-Pass is 8.3 miles long, has a navigable width of 350 feet and a 30-foot water depth. Its sloped banks have been protected against wave action by a strip of crushed rock extending 8 feet below and 3 feet above the water line. The water level in the new channel will be maintained at an elevation 569 feet above sea level.

The excavation work was done mainly by tractor-hauled scrapers and seven-cubic-yard draglines, with 50-ton heavyduty trucks carrying the dirt away. The earth so removed was placed in land forms in specific disposal areas along the channel. These land forms in specific disposal areas along the channel. These land forms rise some 60 feet above the canal grade and, when combined with tree planting, will provide windbreaks for passing vessels. There is also a possibility that these lands, suitably landscaped, could be used as a future regional park for public use. In addition, a 100-foot right-of-way on each side of the new channel along its entire length will be used for service roads, lighting equipment and emergency tie-up facilities.

One of the first undertakings of the Welland Project was the construction of a syphon to divert the waters of the Welland River under the new navigation channel. Building a new course for a waterway, although not an easy task, is a common engineering procedure today; making an underground stream out of a full size river is something else again! Located near the Port Robinson end of the channel, the reinforced concrete box culvert designed to meet this challenge contains 38,500 cubic yards of concrete and 2,500 tons of reinforcing steel. It is a four-tube syphon, 94 feet wide and 638 feet long.



Junction of new Welland By-Pass with existing Welland Canal at Ramey's Bend.

Founded on bed rock, it can accommodate a maximum flow of 12,000 cubic feet of water per second. Upon its completion, in the spring of 1971, the waters of the Welland River were rerouted through a new diversion channel leading to it and the old river bed was filled in.

Ancillary to the By-Pass Project itself was the major revamping of the road and rail network in and around the City of Welland. The rail relocation was the most complicated and expensive since it involved the building of 100 miles of new trackage and marshalling yards, a new station and freight depots as well as a new control centre. While the entire cost of the rail relocation was borne by The St. Lawrence Seaway Authority the engineering work was carried out by the three railways involved — Canadian National, Penn Central and the Toronto, Hamilton and Buffalo. The rail project called for the acquisition of some 22,000 tons of new rails, 2,500,000 tons of crushed stone for ballast and 300,000 wooden railway ties.

Original plans had included the building of a highspeed vertical lift bridge over the new channel for the railways. However, following further study, consultants felt that a bridge would not provide satisfactory service for the predicted traffic volumes of each mode and recommended the construction of a tunnel at Townline Road. Building this tunnel meant that all rail lines had to be rerouted in order to converge at the tunnel site. It further involved the excavation of 18 million cubic yards of dirt and the grading of the land lying east and west over two and a half miles on each side so the train track grade would be no more than nine inches in 100 feet. The tunnel is 1,080 feet long, 116.5 feet wide and 35 feet high. It provides three sets of rail tracks on the south side and a two-lane highway on the north. The Townline Tunnel opened to road traffic in July 1972 and the first trains should move through it in February, 1973.



The Townline Road/Rail Tunnel, Running east-west beneath the new channel on the Old Townline Road was opened to automobile traffic in July 1972 and to railway traffic in February 1973.

Another tunnel, at East Main Street, opened to traffic in June 1972. It contains a four-lane highway and was built on a 50-50 cost-shared basis by the Ontario Department of Transportation and Communications and The St. Lawrence Seaway Authority. The construction of this tunnel required 40,500 cubic yards of concrete and 4,500 tons of reinforcing steel. It is 724 feet long, 75 feet wide, 26.5 feet high and is equipped with special pumps that run 24 hours a day to keep it completely dry.

The By-Pass construction also necessitated the relocation of some 50 miles of north-south and east-west road arteries under the jurisdiction of provincial, regional and municipal authorities. As a result, a new major road, Provincial Highway No. 140, located on the east side of the new channel, now links Welland and Port Colborne, through the new East Main Street Tunnel.

Although several municipal roads had to be closed because of the By-Pass Project, satisfactory agreements were reached with municipal officials for their rerouting or replacement. Most of the work involved in the road relocations was carried out by the responsible agencies with financial assistance from the Seaway Authority.

The construction of the new channel, the two tunnels running under it and the road relocations necessitated the installation of new public utilities operated by Ontario Hydro, Provincial Gas, Bell Telephone and the City of Welland. Several miles of hydro, gas, telephone and sewer lines had to be laid by the various agencies involved, at the expense of the Authority. This phase of the project gave the area new landmarks that are visible for miles. Ontario Hydro erected two of the highest transmission towers it has ever constructed on either side of the channel. They were designed to provide passing ships with a 120-foot clearance under the high voltage cables they support. In addition, a modern lighting system, fitting in with the existing equipment along the rest of the canal, was strung along the sides of the new By-Pass, to allow safe transit after dark. Viewed from the air, this luminous 27 mile-long strip is an imposing sight indeed!

As a replacement for several docks on the old canal which were used by local industries, The St. Lawrence Seaway Authority built a 1,000-foot dock on the west side of the new channel near Ontario Road. It is built on steel supports, has a reinforced concrete deck and will easily handle the large lakers and ocean vessels that will be cruising the new channel. The only docking area between Thorold and Port Colborne, it was designed to accommodate rail connections. Nearby is a pumping station which will flush the waters of Lyon's Creek under the new channel.

At the close of the 1972 navigation season, work crews built two dikes across the old channel at Townline Road, cutting off the water flow in order to permit the completion of the rail tunnel. At the same time, culverts which had been installed through the plugs in the new channel allowed a flow of about 600 cubic feet per second to move through the By-Pass to feed the downstream municipalities and industries that depend on the canal for their water supply.

At the peak of the construction period, more than 4,000 men were employed on the overall project, putting in millions of man-hours of work with thousands of tons of equipment.

The foresight which went into the planning and design of the Welland By-Pass Channel will allow it to be incorporated, with little or no change necessary, into any future canal improvement across the Niagara Peninsula.

In all, the 188.3 million By-Pass Project is more than a marvel of engineering expertise. The fact that an undertaking of this magnitude could be achieved within severely restricted time schedules and without any interruptions in road, rail and marine traffic is a tribute to the spirit of cooperation of the men and agencies directly involved in its realization.

'MIKULA'— What's in a name

The latest addition to the Canadian Coast Guard fleet is the *Mikula*, the training ship attached to the Canadian Coast Guard College, which was named by Mrs. Pierre Camu, in a brief ceremony at Sydney, N.S., on 2nd June, 1973.

The *Mikula*, which has been specially equipped to provide instruction in seamanship, navigation and engineering, will be manned entirely by Coast Guard cadets under their own officers and will cruise the Atlantic coast and Gulf of St. Lawrence in the Summer months to augment the academic curriculum of the College in Winter.

Although the *Mikula* is the first training ship to be commissioned as such in the Canadian Coast Guard, she is not new, having been converted from the former *Lurcher* lightship, but the name was bestowed in recognition of an earlier *Mikula* which had an unusually interesting career. The story goes back for sixty years to other days and other ways.

By 1913 icebreakers had been used successfully to control flooding in the St. Lawrence Ship Channel and it was decided to reinforce the two then in service — the *Montcalm* and *Lady Grey* — by another, the hope being that the River could thus be kept open to Trois Rivieres in Winter. Up till then most of our ships had been built in Britain but with increasing Canadian interest in shipbuilding because of the naval re-armament race of the period, it was decided to place the order for the new ship with Canadian Vickers at Montreal whose plant had just been completed.

Construction of a fine twin-screw icebreaker to the highest specification was looked on as an excellent pilot project for the training of shipyard workers and, on 18th March, 1914, the contract was signed. The new ship, of 3,600 indicated horsepower, complete with machinery, boilers and all equipment, was to be delivered by 30th November 1915 for the price of $998,583 complete. In the meantime the Great War broke out, Canadian Vickers at once plunged into the building of submarines — incidentally they built the first submarine to cross the Atlantic under its own power — and the icebreaker was relegated to a lower priority, her launch not taking place until May 1916.

The launch was something of a milestone in Canadian shipbuilding history. Lady Borden, named the new icebreaker *J. D. Hazen* and expressed the wish that the vessel would prove a credit to her builders "...And to Canada, land of her birth." The patron of the name, the Hon. John Douglas Hazen, formerly the Premier of New Brunswick, who was Minister of Marine and Fisheries from 1911 to 1917, was also Naval Minister in Borden's Dominion cabinet; he made a substantial contribution to the Canadian war effort and was subsequently knighted for his services. In a speech after the launch the Prime Minister cast doubts on the *J. D. Hazen* remaining in Canada, hinting darkly that:

> "...This ship may be applied to some purpose connected with the carrying on of this war and furnishing of supplies. If such should be the case, and in any case, the Company are to be congratulated for a work which will be in the cause of Empire and the Allied Nations."

Despite Sir Robert Borden's misgivings, the *J. D. Hazen* was duly registered at the Port of Montreal but shortly afterwards, by Order-in-Council of 28th August, 1916 she was sold to the Russian government for service at Archangel where icebreaker support was desperately needed for the hard-pressed armies of the Eastern front. Before the end of the year, although in an uncompleted state, the *J. D. Hazen* was on her way to Russia; she was the first vessel of any kind on Canadian Vicker's order book and, as she left Montreal, probably few people expected to see her again. On 13th February, 1917 her registry, Official No. 138227, was closed with the notation, "Certificate cancelled". The Department of Marine and Fisheries was refunded the amount actually expended on the vessel, $349,504.05 .



The CGS *J. D. Hazen* leaving Montreal for Russia in 1916. Under Russian ownership she became the *Mikula Seleanovitch* which was shortened to Mikula on her return to Canada in 1922. The Mikula was scrapped in 1937.

1917 was a terrible year for millions of many nationalities who were caught in the maelstrom of war; in Russia the imperial government fell to the Bolsheviks who swept into power and signed an armistice with Germany. Years of confusion followed, Allied troops fought with 'White' Russians against the 'Reds' and in the torrent of events it was a matter of little note to most people when an obscure icebreaker called the *Mikula Seleaninovitch* fell into French hands on the conclusion of hostilities. But word soon got round in shipbreaking circles and, after survey in the port of Cherbourg, an Order-in-Council signed by Mackenzie King and Lord Byng of Vimy, authorized that she be purchased for the sum of 95,000 pounds sterling, the amount to be paid out of an appropriation which had been earmarked for a new icebreaker. On 5th August, 1922 the *Mikula Seleaninovitch* arrived once more at Quebec.

The Russian name was something of a mouthful for Departmental taste but in shortened form it has an undeniable attraction and Official No. 138227 was reinstated in the *List of Shipping* as the *Mikula.* Nothing has so far come to light on the origins of the elusive Seleaninovitch but, whether Czarist lady or heroine of the Revolution, the subject would be an intriguing research project for an historically minded cadet. There is, of course, the risk of disillusionment, as the story might turn out to be anything but romantic; in their salty way the crew of the *Mikula* were not long in finding a workaday substitute from the succinct vocabulary of seamen. The *Mikula* was a coal-fired steamship and with the constant fluctuation of power required in icebreaking it was hard for the firemen to keep steam; one moment they would be shovelling like mad as the bridge rang down for full throttle, only to hear the roar of escaping steam a few minutes later as the engines were stopped and the safety valves lifted. To the toiling stokehold crew there was a more satisfactory ring to their own adopted name of *Mikula* 'Sonavabitch'.

Nevertheless the *Mikula* was a successful ship and, with the addition of the *Saurel* in 1929 and *N. B. McLean* in 1930 the St. Lawrence was well served. But the years were beginning to tell on the *Mikula* and on 20th April, 1937 she was sold to the Maritime Navigation Company of Liverpool, Nova Scotia. From time to time rumours are heard that the old *Mikula* turned up once more in Russia in her hour of need, but in fact she was scrapped in Scotland. With the booming price of scrap before the Second World War an icebreaker would have fetched a good price. The *Mikula's* Certificate of Registry was closed on 20th December, 1937.

So much for the original *Mikula.* The present cadet training ship *Mikula,* second to bear the name, was built by the Kingston Shipyard as the *Cataraqui,* officially known as *Lightship No. 3,* and was so named by Mrs. Roland Michener, whose husband was then Speaker of the House of Commons on 4th September, 1959. It would appear that changes of name are inseparable from the *Mikula* tradition. The *Cataraqui* was never employed on Lake Ontario but after some time at Prescott for installation of the aids to navigation she was assigned to the Lurcher shoal off the coast of Nova Scotia. When official application was filed for the name *Lightship No. 3,* the late George Guthrie, who was then the Registrar of Shipping, brought to light that we already had an older No. 3 (ex. *Messines)* in service at Red Islet, as a result of which the *Cataraqui (No. 3)* became the *Lurcher* (No 4).

The *Lurcher* lightship was discontinued on 1st October, 1969, the last lightship of any kind in Canada, and a worthy upholder of a long line of such vessels which date back to the beginnings of navigation. For conversion to the needs of a cadet training ship she was placed in the hands of the North Sydney Marine Railway Co. Ltd. which carried out the structural alterations, much of the other refitting being done at the Coast Guard College by staff and cadets. *Mikula* is an appropriate name, recalling on the one hand a pilot project at an interesting stage in the history of Canadian shipbuilding and, on the other, an international transaction in response to a request for aid. Circumstances change, ships come and go, but the story of the *Mikula* is likely to remain an intriguing episode in Canadian Coast Guard history.



The launching of the *Cataraqui* (Lightship No. 3) by Mrs. Michener at Kingston on 4th September, 1959. Subsequently named *Lurcher* (Lightship No 4) this vessel in 1973 became the first Canadian Coast Guard training ship and was named *Mikula*. Note that the vessel has been launched broadside and has just recovered from the first breathtaking roll which is always a spectacular moment.

Madame Camu with the CCGS Mikula which she named at Sydney, N.S. on 2nd June, 1973. Note that the Mikula retains the heavy anchor and centreline hawspipe which is characteristic of lightvessels.



HOW THE CHIEF L

The following narrative is abstracted from manuscript minutes of the Board of Steamboat Inspection, dated 11th May, 1891, being the evidence of the Chief Engineer of the steamboat *Lillie*, of Hamilton, respecting a boiler accident.

"She left Yonge Street Wharf Saturday 9th May at or about 2 p.m. I went aboard Thursday 7th inst. The Captain got McGuire, plumber, to connect the inspirator to the steam drum to be independent. It was still connected and it would not work, or work for a few minutes and then stop; when I went to dinner the water was near the bottom of the glass, when I came back from dinner the water was near the top of the glass and the engine was not working. I was told the engine pumped up the water. Stopped the engine by a bell, started again, then backed up by bells. Before this, seeing some passengers coming aboard, told the owner the inspirator did not work and would not take it off McGuire's hands until it was put in proper shape.

We then left and before getting past the Queen's Wharf I told the Mate to tell the Captain she would not hold her water. The Mate and the Fireman were in the firehold firing up and attending to the boiler. I attended to the water myself and put in two fires. I kept telling the Captain she was get-



"Cap'n's compliments, sir, and he'd like to k

ST HIS 'TICKET'



Mate's making out as a stoker."

ting too low (water) — I knew she was getting low and loosing gradually and although I knew I was responsible, they — the mate and the fireman — continued to fire, telling me it was all right, although I knew the water was getting low. On looking into the furnace found the crown down, told the Mate to draw the fires, had previously to this told the Captain the crown sheet was down on the bars before drawing the fires.

On Thursday from 11 a.m. overhauled the pony pump, on Friday still overhauling the pony and could not get her to work. The Captain and Mate also worked at the pony. It worked partially on the short stroke but not when making a long stroke. The Captain and Mate appeared to run the whole thing whenever I went on board.

I could not find why the pony would not work, and wanted to get a man from William's who understood."

The Board were unimpressed by this statement and noted that "...The engineer is aware that he did wrong in permitting the Mate and Fireman to fire up when he found the water low and getting lower." They thereupon suspended his 'Ticket' for three months, commencing 9th May, 1891.

ACCIDENT RESEARCH

The University of Manitoba has received a grant of $31,000 from the Ministry of Transport for research in the field of accident research methodology.

The research program seeks to track down all factors or conditions contributing to an accident, identify mechanisms involved in the cause of an injury and in injury severity reduction, evaluate the effectiveness of new safety features and Federal Motor Vehicle Program standards, detect any design and functional problems of a vehicle and highway for immediate countermeasure action and to pinpoint specific research projects needed in the field of vehicle and traffic safety.

Each accident selected is investigated on site and the studies will consist of a balanced distribution of fatal, injury-producing and property-damage accidents, with the stipulation that at least one of the vehicles must be damaged to the extent that it must be towed from the accident scene. These in-depth investigations will include a careful analysis of the human, vehicle, and environmental factors of the collision as well as an examination of the pre-crash, crash, and post-crash phases of an accident.

The research program is multi-disciplinary and the principal participants will be members of the faculties of medicine and engineering. Full cooperation from a number of local agencies and institutions — particularly law enforcement agencies — is anticipated.

Actual operation of the program will be the responsibility of the basic research team headed by Dr. W. Mulligan of the Department of Surgery. Other members of the basic research team are Dr. A. Soliman, civil engineering; E. Holland, head of the photography unit, instructional media; G. Pizey, a mechanical engineer; Mrs. S. Gessler, a nurse with a background in critical care medicine and social psychology and for the summer, Lars Andersson of the Volvo Traffic and Research group in Sweden.

An Advisory Board has also been established to monitor the program on a weedly basis. It is chaired by Dean Hoogstraten of the Faculty of Engineering.

The Ministry's Road Accident and Vehicle Defect Investigation Branch noted that this was the eight university program funded by the Ministry, to the tune of $210,000."

The project is unique in having the only headed by a member of a medical faculty.

Other universities involved are the University of New Brunswick; McGill University, Montreal; Ecole Polytechnique, Montréal; University of Toronto; University of Saskatchewan, and the University of Alberta.



Presentation of the grant for accident research are, left to right, Dr. W. Mulligan, head of the research team; W. Bancroft, head of the road and vehicle defect investigation, Ministry of Transport, Ottawa; Dean Hoogstraten, chairman of the advisory board, and Dr. D.W. Penner, Department of Pathology, and a member of the advisory board.



Ottawa conference of team members, of participating Universities in accident research.

A QUEBEC, beau port

par

Hèlén Cyre

De long en large, 38 postes d'amarrage. Au nord, l'Anse-au-Foulon, les bassins Princesse-Louise et les battures de Beauport; du côté de Lévis, les quais du même nom, les autres c'est des Lauzon.

"Profond comme au large de l'île.." dit la chanson de Vigneault. En cet endroit, le fleuve fait bien 45 pieds permettant de recevoir les bateaux dont le poids en lourd dépasse les cent mille tonnes.

Et quoi encore?

Pour le transbordement, un équipement très moderne, et prêtes à le témoigner, hautes et droites comme des pylônes, trois grues à conteneur, dont l'une vient tout juste d'arriver d'Angleterre.

Pour l'entreposage suffisamment de hangars, sans compter les élévateurs à grains qui engouffrent à eux seuls jusqu' à huit millions de boisseaux.

Tandis qu'ailleurs on remplit de blé un navire commercial de haute mer, ici même s'amoncelle à grandes pelletées un concentré de minerai ... le profane dirait un tas de terre anonyme.

Aux beaux temps de la colonie

Québec fut longtemps le premier port canadien. Mille huit cent soixante-cinq marque le début de sa rivalité avec Montréal. Elle couincide avec l'ouverture d'un canal en amont, les progrès de la navigation et le développement de la métropole.

Mais le regain d'activités qu'il connaît en cette décennie prouve qu'il est de bonne guerre. En 1972, Québec se classe troisième en importance, après Vancouver et Montréal, dans la lignée des ports nationaux.

Leader dans le trafic du papier journal, du bois à pâte et de l'amiante, Québec supplante Montréal dans le transport maritime des produits pétroliers. Ces derniers représentent 62% du trafic total du port. L'implantation d'une nouvelle raffinerie, il y a deux ans, a favorisé cet essor.

Les produits pétroliers, mazout, essence et pétrole brut sont secondés par les grains. Leur tonnage par rapport au total est de 19%. Cette denrée connaît une stabilité relative. Par ailleurs, il est intéressant de remarquer l'accroissement à l'exportation des rebuts de métaux, indice d'une demande croissante dans l'industrie japonaise de l'automobile.

L'avènement des conteneurs est un point tournant dans l'histoire portuaire. A cet égard, au début des années '60, Québec a joué un rôle de pionnier au Canada. Le taux de conteneurisation à Québec s'établit maintenant à 60% de la cargaison générale, laquelle couvre la majorité des denrées autres que le vrac.

Un site accueillant et commode

En 1960 les paquebots ont transporté près de 25000 personnes à leur arrivée ou départ; aujourd'hui, leur nombre est négligeable. Les développements de l'aviation (tarifs réduits, horaire varié, service amélioré...) ont rendu la navigation peu concurrentielle dans le transport des passagers intercontinental.

Bien sûr, rien n'empêche les bateaux de croisière de venir faire escale aux pieds de la falaise. Passer outre en des lieux aussi pittoresques serait impensable.

Nulle invention, si fameuse soit-elle, ne rendra désuet le plaisir qu'on peut s'offrir quand, sur les rives du Saint-Laurent, à bord d'un navire de plaisance ou d'un simple voilier, on a décidé de se la couler douce.

Le port de Québec est invitant. Il est aussi commode.

Le navire qui rentre titubant par suite d'une collision un soir de brouillard, trouvera pour se dépanner les outils nécessaires. Dans la région, on dispose également des services de génie naval et, à Lauzon, d'ateliers de réparation.

Soit, il n'y pas que le secteur palliatif qui fasse bonne figure. Le port de Québec est aussi le carrefour d'un réseau de transports

diversifié.

On trouve sur les lieux un héliport, un double réseau ferroviaire, et toute récente, l'autoroute Dufferin-Montmorency.

L'héliport gare trois hélicoptères. Ils jouent un rôle important dans l'entretien des bouées et des phares.

Les voies ferrées s'alignent à perte de vue, distribuant la marchandise à travers le Canada et les Etats-Unis.

Quant à la nouvelle autoroute, non seulement parce qu'elle donne accès directement au port, mais aussi parce qu'elle est sur le point d'être reliée à des voies aussi importantes que le boulevard de la Capitale, les routes Henri IV, Duplessis et Transcanada, jouera un rôle prépondérant dans l'avenir du port.

Un avenir prometteur

Au port de Québec, l'espace disponible est grand, grand comme cent acres, grand comme l'avenir.

L'industrie intéressée au voisinage d'un port, qu'elle soit de transformation ou de finition, a beau jeu. Les terrains vacants, étant offerts en location, permettent aux entrepreneurs de canaliser leurs capitaux dans la construction et l'équipement de l'entreprise, minimisant ainsi l'investissement initial.

Dans un avenir rapproché on prévoit que de noucelles industries fassent de Québec leur chez soi. Le personnel, l'équipement et les moyens de communication en place sont en mesure d'assurer leur développement.

Autrefois le port de Québec était le premier au pays. Aujourd'hui les défis qu'il relève sont dignes d'autant d'éloges.

Mais à quoi bon en dire plus? Maintenant il faut le voir.



A Québec, beau port!



Paysage urbain: le port de Québec en pleine activité.



Vu de la rive nord, le côté sud du port de Québec, Lévis.

CANADIAN COAST GUARD GRADUATION : 1973

The Canadian Coast Guard College at North Sydney, Nova Scotia, graduated its largest class of officer cadets at ceremonies which took place Saturday, June 2nd.

The 34 graduates have completed a four-year training period, and are now working aboard various ships in the Canadian Coast Guard fleet.

The Canadian Coast Guard College, which opened its doors to the first class of cadets in September, 1965, trains both navigation and marine engineering officers for the Coast Guard. Its aim, apart from the nautical and academic aspects of the four-year course of training, is development of leadership qualities in the young people who, on graduation are assigned to responsible positions as deck and engine room officers aboard the Coast Guard ships. They may serve aboard powerful icebreakers, in speedy search and rescue craft, aboard the world's most modern weather-oceanographic vessels, or in the lighthouse and buoy-tending vessels, that constantly travel Canada's shipping lanes.

A highlight of the graduating ceremonies was the appointment of John R. Baldwin, President of Air Canada to the rank of honorary commodore of the Canadian Coast Guard. Mr. Baldwin is a former deputy minister of the Department of Transport.

Guest speaker at the ceremony, Joseph-Philippe Guay, Parliamentary Secretary to the Minister of Transport, told the graduating class that "First and foremost you are to become ship's officers in one of the most respected services in the world. But more that that, you will have the opportunity to broaden your horizons as you gain experience and expertise." The traditional role of the mariner's orientation to seagoing life is undergoing drastic changes, "which are rapidly transforming the Coast Guard into a unit which will become firmly linked with land operations, and open up avenues of opportunity for its officers across the broad spectrum of transportation as a whole."

Mr. Guay announced that plans exist to introduce crew training programs in the near future. "This will enhance efficiency by achieving mas-



Guest speaker, Joseph-Philippe Guay, parliamentary secretary to the Minister of Transport.



John R. Baldwin, right, president of Air Canada is being congratulated by Dr. Pierre Camu, Administrator of the Canadian Marine Transportation Administration. Mr. Baldwin was named honorary commodore of the Canadian Coast Guard.

tery of fundamental seamanship and basic trades in crew members before they board a vessel and better prepare them for further on-the-job training."

Mr. Guay said that life at the College had been particularly arduous as a result of the loss of the gymnasium and other recreational facilities in the fire that destroyed several buildings at the college two years ago. "I am now delighted to announce on the Minister's behalf that Treasury Board has approved a submission for a new $250,000 gymnasium complex, which I am sure you will be pleased to learn will contain a swimming pool."

Graduation ceremonies were followed by launching of the CCGS *Mikula* by Mrs. Pierre Camu, wife of the Administrator of the Canadian Marine Transportation Administration. The *Mikula*, a 500-ton completely refitted former Lurcher light ship, was turned over to the college for use as a training vessel.

Graduating students:

The students graduating as navigation officers this year are: from the Province of Quebec, J.M.F.G. Bergeron (Charlesbourg), Bernard Cayer (Longueuil), Roy Galarneau (Longueuil), Daniel L'Heureux (Beauport), Yves Leclerc (Nicolet), Robert Paris (Pointe-aux-Trembles), Claude Saint-Amour (Lachine), Denis Vaillancourt (Montreal); from Nova Scotia, R.A. Ashton (Eureka), J.W. Cormier (Halifax, V.J.L. Saunders (Sydney); from Newfoundland, J.H. Warren (Freshwater); from Manitoba, M.A. Boissonneault (S. Norbert); from British Columbia, P.R. Charter (Burnaby).

The students graduating as engineer officers are: from the Province of Quebec, Alain Cloutier (La Tuque), Gilles Gagné (Amqui), Gilles Gauthier (Port-Alfred), Marcel Hébert (St. Célestin), Daniel Henri (Longueuil), J.E.R. Pilote (Sillery), J.A.A.M. Rouleau (Grand-Mère), Patrice St. Pierre (Sept-Isles); from New Brunswick, W.B. Jamer (Andover); from Nova Scotia, J.S. Mayich (Sydney), D.G. Patterson (Maitland), K.S. Roberts (Halifax; from Ontario, W.G. Conway (Ottawa), C.I. Nielsen (Mt. Hope), D.J. Richmond (Burlington), N.J. Shorten (Georgetown); from Saskatchewan, D.G. Dietrich (Mendham); from Alberta, P.V. Shiel (Canmore) and Bud Streeter (Grimshaw).



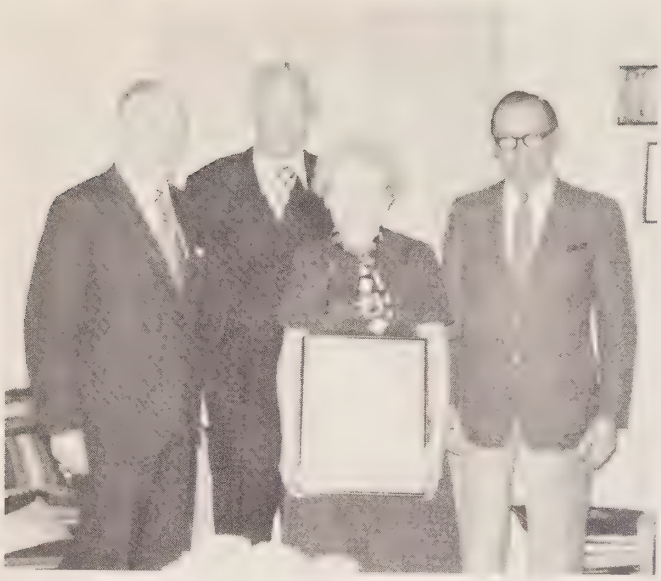
J.N. Ballinger, Director of the Operations Branch in the Ministry of Transport's Marine Services awarding one of the many prizes won by the Coast Guard College cadets.



The 1973 graduating class of 34 officer cadets who have successfully completed the Coast Guard College's four-year course.

MERIT AWARDS

PRIMES AU MERITE



Miss Mildred Graham, received unexpected visitors to her home when she was presented with her Merit Award for which she recently qualified, left to right are: Stuart T. Grant, O.G. Stoner, Deputy Minister, Mildred Graham and Jim Dean.

Mlle Mildred Graham a reçu chez elle des vistieurs inattendus, venus lui remettre la prime au mérite qui lui a été recemment décernée. De gauche à droite, on reconnaît M. Stuart T. Grant, le Sous-ministre M.O.G. Stoner, Mlle Mildred Graham et M. Jim Dean.

Airport Manager of Resolute Bay, W.J. Mckay redesigned the water supply system for the airport. The new system has alleviated service failures and frequent repairs to frozen lines each winter. By using on-site materials available, the facility has resulted in a projected saving in excess of $60,000. The design has now been document for application at other northern establishments.

M.W.J. McKay, directeur de l'Aéroport de Resolute Bay, a reçu une prime de $1000 pour avoir conçu un nouveau système pour le ravitaillement en eau de l'aéroport. Le nouveau système a permis d'améliorer le fonctionnement du service d'eau et de diminuer les réparations qu'imposait le gel des conduites en hiver. Les nouvelles installations ont été construites avec des matériaux se trouvant sur place, ce qui entraînera une économie probable de $60000.

On étudie actuellement la possibilité d'installer le nouveau système dans d'autres établissements du Nord canadien.





J.M. Graham, Moncton, received his award for "ingenious methods" he employed in the recovery of disabled helicopters from remote areas. Presenting the award is T.H. Prescott, Regional Administrator, Air.

M.J.M. Graham (Moncton) a reçu une prime pour les méthodes ingénieuses employées pour récupérer des hélicoptères immobilisés dans des régions isolées. M.T.H. Prescott, Administrateur régional des transports aériens, lui a remis sa prime.



Gerald S. Mahony, Regional Superintendent of Airport Services and Properties for Ministry of Transport, Atlantic Region, $2,000 in recognition of his major role in the development and implementation of the Trans-Oceanic Plane Stops (TOPS) Program At Gander, Nfld. Presenting the award is T.H. Prescott, Regional Administrator, Air.

M. Gerald S. Mahony, surintendant régional des services et biens des aéroports (Atlantique), a reçu une prime de $2000 en reconnaissance du travail important accompli dans l'élaboration et l'application du programme d'escales trans océaniques (TOPS) à Gander (Terre-Neuve). Sa prime lui a été remise par M.T.H. Prescott, Administrateur régional des transports aériens.



J.N. Swan, H.Q. Ottawa, $1,000 for efforts well beyond his normal responsibility, to establish on his own initiative, a system for accurate recording of Ministry of Transport revenue from airport landing fees and terminal charges.

Mr. Swan received his award from M.G. Hagglund, Administrator, Arctic Transportation Agency.

M.J.N. Swan (Administration centrale, Ottawa) a reçu une prime de $1000 pour les efforts a déployés, en plus de son travail régulier, en vue de créer un système d'incription des recettes provenant des redevances d'atterrissage et des droits perçus aux aérogares.

La remise de cette prime a été faite par M.M.G. Hagglund, Administrateur de l'Agence des transports dans l'Arctique.

Joint Merit Award, for five members of the Prince Rupert Helicopter Base, to the tune of $2,500.

The Award was for their participation in ensuring the safety of the crew and passengers of a helicopter downed in rough seas and in the salvaging all of the valuable mechanical and communication equipment, in the most adverse weather conditions.

During the rescue and salvage operations these employees experienced personal risk and discomfort far and above what the Ministry could normally expect. Left to right are: Gary Owen Greissel, George Gyorgy, Philip Howard Ablitt, William C. Sheppard and Glenn Albert Dalzell.

Une prime au mérite collective s'élevant à $2500 a été accordée à cinq membres de la base d'hélicoptères de Prince Rupert.

La prime leur a été remise en reconnaissance des efforts extraordinaires qu'ils ont déployés dans des conditions météorologiques particulièrement mauvaises pour ramener sains et saufs les membres d'équipage et les passagers d'un hélicoptère tombé en panne par gros temps et pour récupérer tout le matériel de communication et l'équipment mécanique de l'hélicoptère.

Durant les opérations de recherche et de sauvetage, ces hommes ont couru des risques et supporté de nombreux désagréments que le Ministrre n'exige pas normalement de ses employés. On voit sur la photo (de gauche à droite) Gary Owen Greissel, George Gyorgy, Philip Howard Ablitt, William C. Sheppard et Glen Albert Dalzell.





Ontario Regional Administrator Ray Goodwin (right) presents merit award certificates to (left to right) Controllers Gerald M. Dodds, George A. Gledhill, Kenneth M. Ralph and Bryce V. Owen. Controller Ivor Allen was not available for the presentation.

Together the group developed an extended terminal control service for Toronto International Airport that has greatly increased the safety of VFR (Visual Flight Rule) aircraft operating within a 20-mile radius of the Airport, and below the 9,500 foot level.

Individual Merit Awards were presented to five others, L.M.E. Hawkins, Ottawa, for outstanding accomplishment relating to the safe operational use of aircraft during icing conditions; D.W. Boyd, Ottawa, for his work in construction of airports under adverse conditions; J.C. Rennie, Ottawa, Telecommunications and Electronic Branch, for his efforts in development of the Semi-Automated en route and terminal, Air Traffic Control System, D.P. Cleland, Ottawa, for development and production of equipment for use on airport runways; M.L. Stanley-Jones, contributions to development of air traffic control equipment.

L'administrateur de la région de l'Ontario, M. Ray Goodwin (à droite), remet les certificats de prime au mérite aux contrôleurs (de gauche à droite) Gerald M. Dodds, George A. Gledhill, Kenneth M. Ralph et Bryce V. Owen. Le cinquième lauréat, M. Ivor Allen, était absent lors de la remise des certificats.

Ces contrôleurs de la circulation aérienne ont conçu un service de contrôle terminal étendu qui augmente sensiblement la sécurité des vols en régime VFR (règles de vol à vue) dans un rayon de 20 milles de l'aéroport international de Toronto et à moins de 9500 pieds a'altitude.

Des primes au mérite ont été accordées à cinq autres fonctionnaires. Ce sont M.L.M.E. Hawkins (Ottawa) pour ses réalisations exceptionnelles en matière de sécurité aérienne dans des condtions de givrage; de M.D.W. Boyd (Ottawa) pour son travail de construction d'aéroports dans des conditions particulièrement difficiles; de M.J.C. Rennie (Ottawa) de la Direction des télécommunications et de l'électronique, pour avoir mis au point un nouveau système semi-automatique de contrôle de la circulation aérienne en vol et aux aéroports; de M.D.P. Cleland (Ottawa) pour la conception et la fabrication d'appareils destinés à servir sur les pistes d'aéroports; et M.M.L. Stanley-Jones, pour son apport dans le domaine de l'équipement de contrôle de la circulation aérienne.



The Manager of Improvement Award of the International Work Simplification Institute was presented recently to W.H. Huck, Administrator, Canadian Air Transportation Administration. The award is made once or twice annually to business, industry or government.

In the selection of Mr. Huck as a "Manager of Improvement", it was noted that he "provides the direction and support required for successful improvement programs". The Administrator's leadership and personal commitment to the participative concept was regarded as evident in policy circulars, at senior executive meetings, in discussions with managers, in delegations of authority and in organizational change to meet the changing role of the Administration.

Mr. Huck recognized the support given to the Participative Work Improvement Program by senior and middle managers of his Administration, located at the Ministry's six regional centres and field sites in Canada, as well as at Headquarters in Ottawa. "Most important to the success of the program is the involvement and contribution of the people in our Administration within a developing climate of receptiveness to improvement change."

L'Institut international de simplification du travail a décerné récemment à M.W.H. Huck, Administrateur des transports aériens du Canada, le prix du dirigeant qui a le plus participé à l'amélioration du travail dans son service. Ce prix est décerné une ou deux fois par année à des dirigeants du secteur des affaires, de l'industrie ou du gouvernement.

Le prix a été attribué à M. Huck pour les qualités de chef et le dévouement personnel manifestés afin d'assurer la bonne marche des programmes d'ammélioration du travail par le participation. Son action dans ce domaine s'est traduite par la publication de circulaires administratives, sa participation aux réunions de cadres, des descussions avec des chefs, la délégation d'une partie de ses pouvoirs et par la réorganisation qu'il a entreprise pour répondre aux besoins courants de l'Administration qu'il dirige.

M. Huck a tenu à dire qu'il avait pu compter, dans son travail, sur la collaboration des cadres moyens et supérieurs en poste dans les six centres régionaux de l'Administration et ailleurs au Canada, de même que sur la participation des fonctionnaires de l'Administration centrale à Ottawa. C'est la participation et l'engagement des employés de l'Administration des transports aériens qui a le plus contribué au succès du programme, a-t-il précisé.



CANADIAN COAST GUARD RADAR NAVIGATION COURSE 7303

Eight Canadian Coast Guard Officers attended a three week course at the Operations Division, Canadian Forces Fleet School, Halifax, from 28 May 73 to 15 June 73. The course included refresher training in Rules of the Road, radio fixing aids, visual pilotage techniques, radar theory and practical Blind Pilotage.

Officers from the Maritimes and Western Regions, are left to right:

MICHEL DALLAIRE, THIRD OFFICER, CCGS TUPPER; HARVEY E. ADAMS, FIRST OFFICER, CCGS MINK; GEORGE GILROY, CHIEF OFFICER, CCGS VANCOUVER; NICHOLAS P. DORSE, THIRD OFFICER, RELIEF OFFICER SAINT JOHN AGENCY; DCR L.J. CAVAN, DIVISION COMMANDER, OPERATIONS DIVISION; STEPHEN A. GOMES, CAPTAIN, RELIEF MASTER MARITIMES REGION: LT (N) R.W. MUNDAY, NAVIGATION COURSE OFFICER; ORRIN E. MILLARD, CHIEF OFFICER, CCGS ALERT; WILLIAM H. FRASER, THIRD OFFICER, CCGS DARING; JAMES BAGGS, THIRD OFFICER, CCGS PROVO WALLIS.

COURS DE NAVIGATION AU RADAR DE LA GARDE COTIERE CANADIENNE

Un groupe de huit officiers de la Garde côtière canadienne a suivi un cours de trois semaines du 28 mai au 15 juin 1973 à la Division des opérations de l'Ecole de la flotte des Forces canadiennes, à Halifax. Il s'agissait d'une période de formation complémentaire sur les règles de route, les aides au repérage par radio, les techniques de pilotage visuel, la théorie du radar et le pilotage sans visibilité.

Les officiers de la région des Maritimes et de la région de l'Ouest qui ont suivi le cours sont, de gauche à droite:

Michel Dallaire, troisième lieutenant, ngcc Tupper; Harvey E. Adams, premier lieutenant, ngcc Mink; George Gilroy, second, ngcc Vancouver; Nicholas P. Dorse, troisième lieutenant, Agence maritime de Saint-Jean; L.J. Cavan, Commander de la Division des opérations; Stephen A. Gomes, capitaine, région des Maritimes; lieutenant R.W. Munday, officier chargé du cours de navigation; Orrin E. Millard, second, ngcc Alert; William H. Fraser, troisième lieutenant, ngcc Daring; James Baggs, troisième lieutenant, ngcc Provo Wallis.



Highlight of the picnic was the fishing game, Mereille & Gisele Proulx organize the contestants.

La partie de pêche a été le fait saillant du pique-nique. Sur la photo, Mireille et Gisèle Proulx s'occupent des concurrents.

PIQUE-NIQUE

MOT PICNIC

Dispensing hamburgers by the score, are Ernistine and Amillia Deluca.

Ernestine et Amillia Deluca distribuant des hamburgers.





Alice Conway, squenches the thirst of the thirsty.

Alice Conway donne à boire aux assoiffés.

All good times come to an end, picnickers wend their weary way home.

Toutes les bonnes choses ont une fin et les pique-niqueurs ont dû reprendre le chemin de la maison.



Suggestion Awards

Russell G. Awde, Aurora, Ontario, $600. Suggestion developed by Mr. Awde, improves the manufacturer's recommended procedure for leveling of the (VASIS) Visual Approach Slope Indicator System.

Georges A. Holt, London, Ontario, $385. Suggested modification to eliminate burning of relay K3 contacts.

Rudolph P. Holata, Vancouver, British Columbia, $250. Suggested the use of silicone rubber to seal off the liquid glands on terminals of nickel cadmium batteries against corrosion and salt build-up caused by vapour penetration.

Eric E. Smith, Calgary, Alberta. $125.

Stanley William Walker, Calgary, Alberta. $125.

Hendrik H. Bruinenberg, Bramalea, Ontario. $170.

Frank Rubenstein, Downsview, Ontario. $75.

Gerald F. Milne, Ottawa, Ontario. $60.

N. Ross Kerswell, Ottawa, Ontario. $40.

Stuart Douglas Callin, Victoria, B.C. $50.

William A. Simpson, Moncton, N.B. $60.

Edison S. Wall, Moncton, N.B. $60.

Douglas E. Rawle, Moncton, N.B. $60.

Robert Sim, Prince Rupert, B.C. $60.

Jacques Cliche, Montreal, Quebec. $75.

Stanislaw Hyde, Oromocto, N.B. $50.

Robert Grover, Hay River, N.W.T. $50.

Bruce G. Bower, Winnipeg, Manitoba, $50.

Primes à l'initiative

M. Russell G. Aude, Aurora (Ontario), $600. M. Aude a proposé une amélioration à la procédure recommandée par le constructeur pour le nivellement de l'indicateur visuel de pente d'approche (VASIS).

M. Georges A. Holt, London (Ontario), $385. La suggestion de M. Holt permet d'éviter l'usure rapide des contacts de certains relais dans des émetteurs.

M. Rudolph P. Holata, Vancouver (Colombie-Britannique), $250. M. Holata a proposé l'emploi d'un composé de caoutchouc aux silicones pour protéger les bornes des accumulateurs au nickel-cadmium contre la corrosion et l'accumulation de sels.

Robert T. Willis, Ottawa, Ontario. $125.

Joseph M. Beaudin, Campbellford, Ontario. $20.

Victor H. McPherson, Agincourt, Ontario. $40.

Lawrence E. Baker, Terrace, B.C. $125.

Kenneth Mills, Terrace, B.C. $125.

Larry Bruce Pollard, Kamloops, B.C. $60.

Denis Boucher, Dollard des Ormeaux, Quebec. $40.

William A. Irving, Moncton, N.B. $90.

George N. O'Brien, Truro, N.S. $20.

J. Lucien Gilles Dion, Lachine, Quebec. $40.

Kenneth H. Tays, Moncton, N.B. $50.

Charles Custance, Winnipeg, Manitoba. $40.

Jerome C. Tochor, Grande Prairie, Alberta. $50.

Dennis Henry Bodkin, Abbotsford, B.C. $50.

RETIREMENTS... RETRAITES...

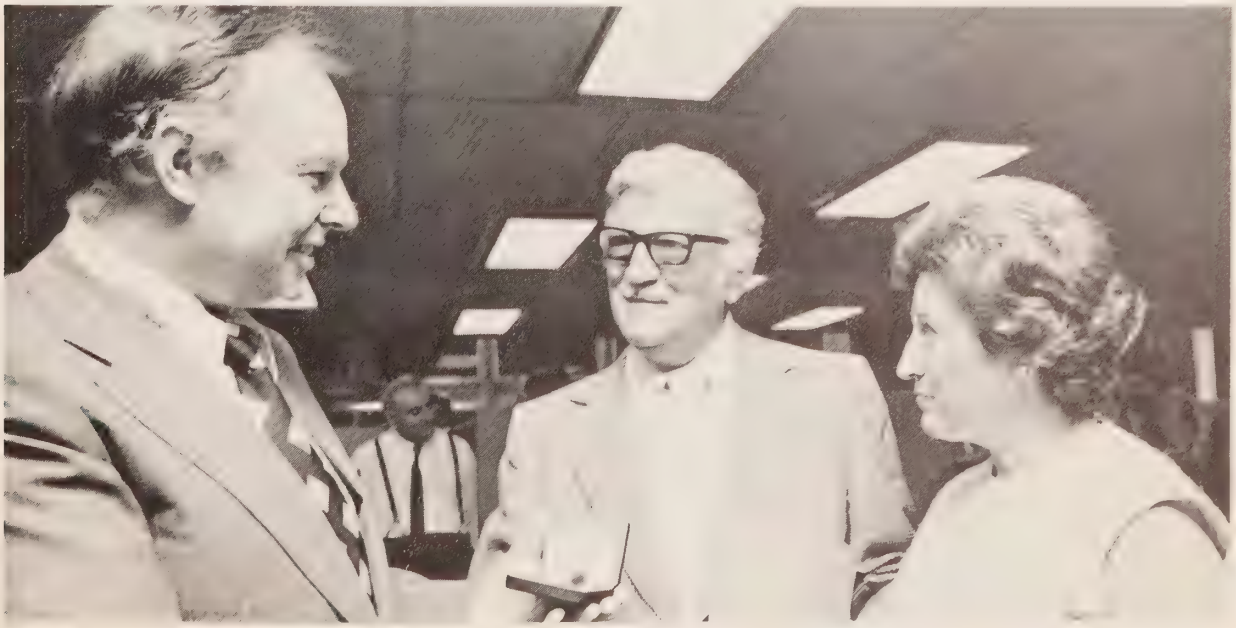


Douglas Keddie, a loyal and hard-working employee of the Ministry of Transport, retired June 21st, 1973, as Executive Assistant to the Air administrator. Doug, an ardent photog rapher, was presented with a photographic lens to while away his retirement. Left to right are: Doug Keddie, Mrs. D Keddie, their daughter Melissa, and W.H. Huck, Administra tor, Canadian Air Transportation Administration

M. Douglas Keddie, adjoint exécutif de l'Administration des transports aériens, a pris sa retraite le 21 juin 1973. Le sachant passionné de photographie, ses collègues et amis lui ont offert un objectif photographique, au cours d'une réunion d'adieu organisée en son honneur. Sur la photo, de gauche à droite: M. Doug Keddie, Mme Keddie, leur fille Melissa et M.W.H. Huck, Administrateur des transports aériens

S.K. Brown, Chief Architect, Construction Engineering and Architectural Branch, presents W.R. Orrell, Senior Specifica tions writer, with a farewell gift on his retirement from the Ministry of Transport after 26 years. On the left is Mrs Orrell.

M.S.K. Brown, architecte en chef, Direction de l'architecture et du génie civil, présente un cadeau d'adieu à M.W.F. Orrell rédacteur principal de cahiers des charges, qui a pris sa retraite après avoir passé 26 ans au service du Ministère. A gauche, nous voyons Mme Orrell





Wm. H. (Bill) Mather, a well known figure at Ottawa International Airport, retired after thirty-five (35) years with the Ministry of Transport.

His friendly disposition and technical knowledge will be sorely missed by his many friends and colleagues.

J.M. Descary, Airport Manager, Ottawa International Airport, was joined by his staff in wishing Bill "Happy Retirement Years".

M.W.H. (Bill) Mather, figure bien connue à l'Aéroport international d'Ottawa, a pris sa retraite après 35 ans de service au ministère des Transports.

Des nombreux amis et collègues regretteront beaucoup son amabilité et ses connaissances techniques.

M.J.M. Descary, Directeur de l'Aéroport international d'Ottawa, s'est joint à son personnel pour faire ses adieux à Bill.

Doug Brown, Director of Material Management, (right), reluctantly bids farewell to two dedicated members of his staff. George Batty (center) and Rheal Bonhomme (left). Both are looking forward to an active retirement; Mr. Bonhomme will be trying out his hand made trailer and, Mr. Batty is going to try and outsmart the local stock brokers.

M. Doug Brown, directeur de la Gestion du matériel (à droite), fait à regret ses adieux à deux membres dévoués de son personnel, MM. George Batty (au centre) et Rhéal Bonhomme (à gauche) qui prennent leur retraite. Tous deux comptent poursuivre une vie active. M. Bonhomme entend mettre à l'essai la roulotte qu'il a construite lui-même, tandis qui M. Batty tentera de rivaliser d'adresse avec les courtiers en valeurs de la région d'Ottawa.



Steamship Inspection—Montreal

By

Mary Ann Monk

The general mandate of "safety of life and property at sea" gives H.J. Aspin, District Surveyor at Montreal, a tremendous and varied responsibility. He and his marine surveyors keep track of Canadian ships "From cradle to the grave".

Plans for new fishing vessels, icebreakers, tugs, cargo ships and passenger ferries, among the diversity of vessels the surveyors oversee, are submitted to the Steamship Inspection Service to be verified for safety, stability and seaworthiness. After final approval either by Ottawa H.Q. or the local office, as required, surveys are made throughout construction at the shipyards and before launching. Surveillance is continued at various intevals during the service of the ship — at annual refit, during repairs and alterations, in drydock and afloat.



Up to 45 separate drawings are required for a new ship. Here Henry J. Aspin, District Surveyor, and Marine Surveyor Bob Smyth check a machinery specification.

Not only is the ship itself under the close scrutiny of the Marine Surveyors; all safety equipment on board must also pass constant and rigorous review, including life rafts, fire extinguishers, alarm systems and life jackets. Rubber rafts are inflated with air manually every year and by their own automatic CO_2 inflation system. Factory inspection of lifejackets is mandatory before distribution and last year alone over 25,000 were tested. The qualification and certification of ships' engineers is also undertaken by the Branch, as well as examination of skills when engineers request upgrading.

Montreal's Marine Surveyors are called out by such agencies as the National Harbours Board and owners and ship builders to certify ships of both Canadian and foreign registry. "According to a multilateral agreement with countries subscribing to the International Convention of Safety of Life at Sea (1960), Canadian vessels can be inspected in their ports, while we inspect foreign vessels on request here, " states Mr. Aspin. If a ship of any nationality is involved in an accident, it must be thoroughly checked before a certificate of seaworthiness is issued and the vessel is allowed to sail again. This certification is also required if the authorities suspect that a ship may not be completely sound or may present a risk to navigation.

The Steamship Inspection Branch also has a responsibility for the surveillance of pollution infractions in ports and waterways. Ships are constantly being watched both at dockside and from the air, where Marine Services aircraft patrol the Seaway waters from the Lakehead to the East Coast. Last year, there were 33 infractions documented and 33 successful prosecutions. So far this year, there has been 100% success again in detections and convictions. Fines of up to $100,000 can be assessed for oil pollution in Canadian waters.

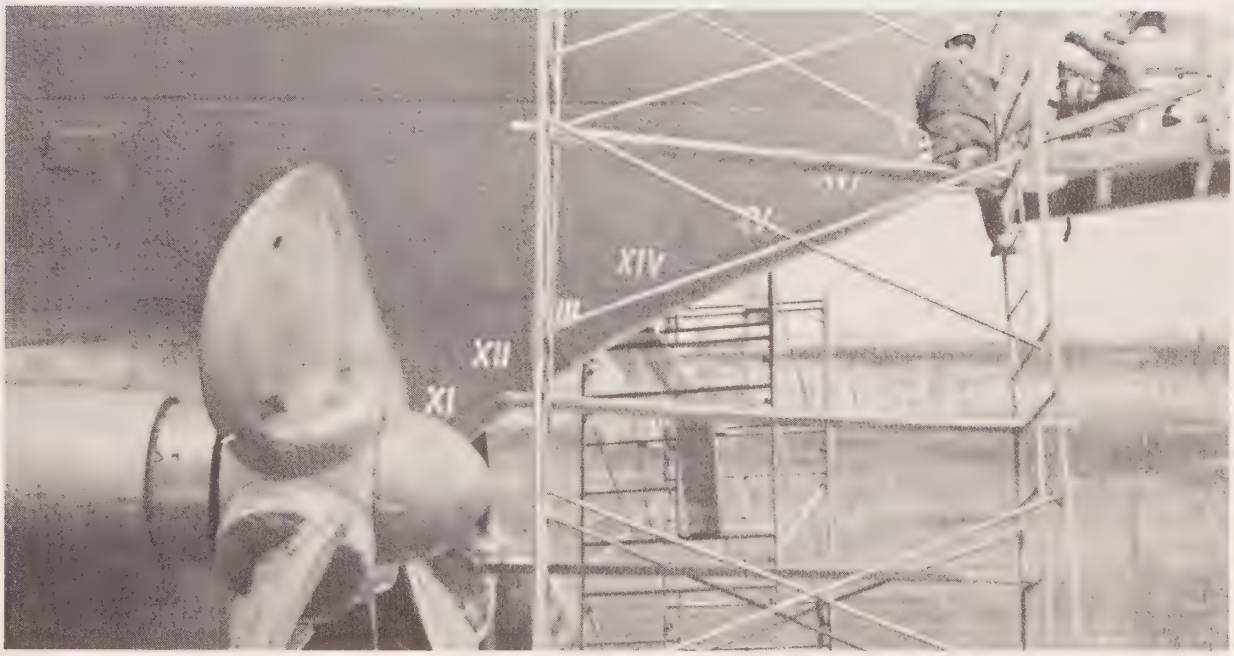
The small but effective team, 14 surveyors, shoulders a great responsibility and workload but enjoys the respect and cooperation of shipping concerns, in the Montreal region.

The day I visited the Ministry's *Abegweit*, operated by the Canadian National passenger-cargo services in drydock for annual refit and marine inspection, Mr. Aspin showed me first-hand the kind of detail required of a marine survey. His men can spend as much as weeks going over a vessel like this with "a fine-toothed comb" and may call in other specialists from their office to check tricky porblems. Captain Lou Cousins received us for afternoon tea in his cabin, apologizing for the rather embarrassing state his ship was in. Considering the safety and comfort of the over one million passengers that will travel on her this coming season, a few weeks "in this embarrassing state" is more than acceptable. The *Abegweit* is ice-strengthened and forms a lifeline between Prince Edward Island and the New Brunswick mainland all year round. She carries passengers, gasoline, gravel, potatoes and other produce almost unhindered through ice that can reach a 15-foot thickness. So the survey of propulsion systems, hull and safety equipment on this type of vessel is most important.

Since April of this year, Nautical Services and Steamship Inspection have been amalgamated at the Montreal office of the Laurential Region, Marine Services. Together they form part of the important new Marine Safety organization. While Mr. Aspin points out, "The Steamship Inspection Branch no longer uses 'inspectors' (but Marine Surveyors) nor are we responsible only for 'steamships'," their continued and expanded contribution to 'the safety of life and property at sea' remains undeniable."



"Abegweit's" ice-strengthened hull and propulsion systems require meticulous maintenance and inspection.



The CN passenger ferry "Abegweit" in drydock for annual refit at Montreal.

All different sizes of Canadian and Foreign vessels are surveyed, down to passenger ships of 5 tons and non-passenger ships of 15 tons.





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transport canada



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Front Cover Transport Canada

Container section, National Harbours Board port, Saint John, New Brunswick.

Page couverture

La conteneurisation occupe une place importante au port St-Jean (N.-B.) du Conseil des ports nationaux.

Photo by Gordon Thomas, Directorate of Public Affairs
Photo de Gordon Thomas du ministère des Transports.

transport canada

CONTENTS/ SOMMAIRE

Transport Council Message
Message du Conseil des Transports 2

Containerization in the 1970's 4

Dans les coulisses du 23e Congrès de l'AIPCN 9

23rd PIANC Congress 11

New Post for Dr. Pierre Camu 12

Nouveau poste pour le Dr Pierre Camu 13

New Potential for Air Cushion Vehicles 14

All Abroad 1057 16

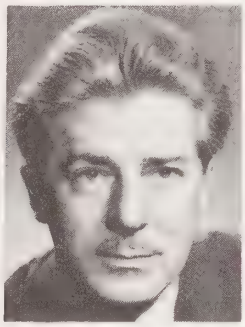
Arctic Mushrooms 20

Interdepartmental Cooperation Speeds Airport Arrivals 22

Ministry Specialists Design Guyanese Hangar 24

Transcan
Mini-reportages 25

TRANSPORTATION COUNCIL/CONSEIL DES TRANSPORTS

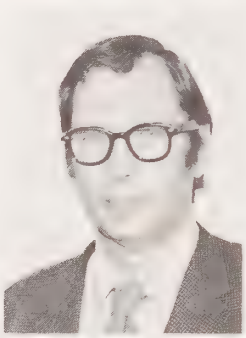


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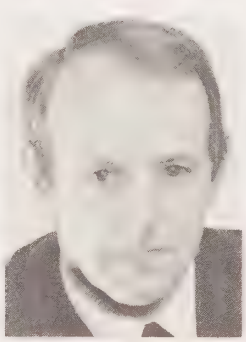

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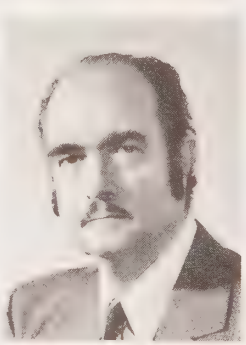
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MESSAGE

Safety, noise and congestion have been of primary concern to transport planners for many years. Relatively new on the scene, however, are groups of people who do not want new or expanded airports, roads, railways, marine facilities or services.

In 1967 virtually all the communities surrounding Montreal wanted the new international airport to be located in their areas, primarily because of its economic stimulus. By 1972, it became obvious that the attitudes of some people had changed. Whether the opposing groups were small or large, right or wrong, did not matter because they got the headlines and consequently the opportunity to sway public opinion.

This relatively new situation raises the question: How did we get ourselves into this defensive posture in the first place?

It's a new ball game. Obviously, people want to be more involved in decisions which might affect them.

No longer do people want civil servants to determine what they need, make recommendations on how to fulfill that need and to have politicians make the final decisions without their inputs.

Transportation planning must now be projected far enough into the future so that the results of public consultation at all levels can be taken into consideration during the decision making process.

Final decisions will always be political. It is the politician who is elected to represent the people — not the civil servant.

La sécurité, le bruit et la congestion sont au premier rang des soucis que connaissent les spécialistes en organisation du transport depuis de nombreuses années. Toutefois, des groupes relativement nouveaux de gens ne veulent ni aéroports, ni routes, ni chemins de fer, ni installations ou services maritimes nouveaux ou agrandis.

En 1967, presque toutes les localités qui entourent Montréal voulaient que le nouvel aéroport international soit établi dans leur voisinage, surtout à cause de son influence économique. En 1972, il devint évident que certains avaient changé d'attitude. Importants ou non, à tort ou à raison, les groupes d'opposition faisaient les manchettes et par conséquent avaient la possibilité d'influencer l'opinion publique.

Face à cette situation relativement nouvelle, on se pose la question suivante: Comment se fait-il que nous soyons maintenant sur la défensive?

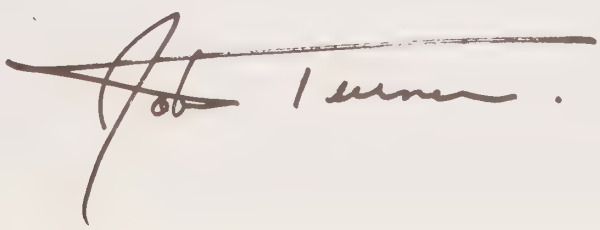
C'est un phénomène nouveau! Il est évident que les gens veulent participer aux décisions qui peuvent les toucher. Les gens ne veulent plus que des fonctionnaires déterminent ce dont ils ont besoin, fassent des recommandations sur la façon de répondre à leurs besoins et que les politiciens prennent des décisions finales sans leur avis.

L'organisation des moyens de transport doit maintenant être prévue suffisamment à l'avance pour qu'il soit possible de consulter le public à tous les niveaux au cours des études qui précèdent la prise d'une décision.

Il appartiendra toujours aux politiciens de prendre les décisions finales. Ce sont eux que le peuple choisit par voie d'élection, non les fonctionnaires.



Robert Turner



CONTAINERIZATION



hristian Endemann IN THE 1970'S

The past decade has marked the advent of the container revolution — the leading topic of discussion in the field of cargo transportation today and probably for many years to come.

While containerization has been acclaimed as a dynamic breakthrough by shippers, it is functionally no more than a box.

In common with every other box, containers economize in the number of movements required to convey a given quantity of goods and afford these goods greater protection from damage and loss than they would otherwise receive.

There are, however, two unique features of this particular box:

a) It has been standardized, making it intermodal; i.e. a container can be carried by almost any mode of transport and easily transhipped between modes.

b) It is large; therefore the amount of transhipment between modes, for a given quantity of goods, is minimal.

From a simple box with doors at one end, not unlike a transport truck trailer, containers have expanded their functions into more specialized forms. There are more side-opening containers with removable roofs, bulk-cargo containers, tank containers, and refrigerated and heated containers.

The increasing use of containers has brought about entirely new types of ships, special railway cars, truck chassis, as well as container cranes, lifters and straddle carriers. Most dramatic has been the development of container ships. In the early sixties containers were mostly carried on conventional cargo ships and handled by conventional ships' gear and port cranes.

In the mid-sixties, ships designed to carry nothing but containers came into use. They were slightly larger and faster than conventional break-bulk cargo ships, at around 15,000 tons with a speed of 20 knots. In the past few years, still larger and faster container ships in the order of 35,000 tons and with speeds of 26 knots, carrying up to 2000 20-foot containers, have come into service. Now being completed are 50,000-ton container ships capable of speeds up to 33 knots, and the Japanese envision 60,000-ton ships carrying 3000 20-foot containers at 36 knots. In addition, many small container-ships for feeder services have been built in recent years for service in European waters, Japan and, in Canada, on the Great Lakes.

◀ *South East view of the Container Section, Port of Halifax, Nova Scotia.*

The container-ship concept has been expanded to other types of intermodal ships, the barge-carrying LASH and SEABEE ships, and ferry-like RORO (for roll on — roll off) vessels. The former carry entire barges, laden with containers and palletized and bulk cargoes, loading and discharging the barges while at anchor. The barges can be towed to their ultimate destinations far inland via river and canal systems. The RORO ships are equipped with their own bow, stern or side loading ramps, and containers, trucks, heavy cargoes and palletized cargo are driven aboard.

Just as important as the ships are the terminal facilities. Modern container ports require wide open piers for handling, transfer and storage of containers. Sheds are not required, as each container is designed to be stored in the open. Important, too, are the large cranes such as the Portainer produced by Paceco to load and unload the ships quickly. The Paceco crane can unload containers at the rate of one every three minutes. Straddle carriers and lifters are necessary to move containers around on the pier and to load and unload them from truck chassis and railway cars.

For large volumes of overland transport of containers, special container trains have been developed. In Canada, CN and CP move containers aboard 81-foot container flat cars to coincide with arrivals and departures of container ships in Montreal, Quebec, Saint John and Halifax from the Chicago and Toronto areas. These container cars can carry two 40-foot or four 20-foot containers, or various combinations of other containers. CN is experimenting with a depressed-centre 85-foot flat car capable of carrying six 20-foot containers.

In addition to major container terminals at NHB ports of Vancouver, Halifax, Saint John, Quebec and Montreal, the Toronto Harbour Commissioners and the Fraser River Harbour Commission at present operate container terminals,

and the Hamilton Harbour Commissioners plan a terminal to commence operation in about five years. Toronto's $2,300,000, 15-acre terminal serves full container ships from Scotland and the Mediterranean, as well as several semi-container services from Europe. Containers are handled by a $600,000 truck-mounted mobile Gottwald crane capable of handling 20 containers per hour.

The essence of containerization is speed of delivery. Customers have found it time-saving and reliable, and it has substantially reduced damage and theft. Because of containerization's speed and regularity — reducing trans-Atlantic deliveries to two weeks or less compared with three months via conventional ships — customers have been able to cut down substantially on their inventory costs.

The growth of containerization has continued unabated and there are no signs of it levelling off. The speed with which traffic is being converted from conventional break-bulk methods to unit load transportation has been breathtaking. Across the North Atlantic, break-bulk or conventional shipping is a specialty now — like having shoes or a suit of clothes made to measure — but it does not enjoy the same prestige or distinctiveness as the sartorial variety.

Similar unit-load developments have materialized on the Europe-Australia run and along the main trans-Pacific routes.

The main ports of Europe, the U.S.A., Japan and Australia continue to show annual rates of increase in container traffic of the order of 50 per cent as compared to an estimated 8 per cent increase in world trade. In short, the role of the container as the new norm, the new basic form of general carrier business, has been confirmed.

As the volume of air cargo tended to double every two or three years, a challenging situation arose which forced many airlines to invest heavily in expensive automated terminals to handle the increasing number of small parcels.

Aerial view Container Port Complex, Saint John, New Brunswick.



However, the arrival of jumbo jets has permitted international air cargo companies to adopt the unit consignment concept and reduce their ever-increasing handling costs. Holds are being designed to carry containers almost exclusively.

The broad range of container sizes offered by the airlines has widened the variety of products that can be carried in unit load devices and there is no limit to imaginative innovations. For example, Scandinavian Airlines has inaugurated an expanded warehouse-to-warehouse cargo service between major German airports and virtually every major city in the United States and Canada.

Turning to the situation in Canada, there can be no question that she is finding herself in an increasingly advantageous position relative to her southern neighbour, the United States.

Helen Delich Bentley, Chairman of the Federal Maritime Commission of the United States, said recently that Canada has made progress in applying the concepts of the container revolution to a degree which has so far eluded the United States.

She added: "In the process it has created a broad and efficient transportation system for the door-to-door movement of international cargoes while setting patterns and examples for others to follow, particularly we in the United States."

In Canada the regulatory atmosphere and the labour climate, together with aggressive rail and steamship management, result in a carrier ability to put together and offer a viable intermodal service.

In the United States, on the other hand, it appears that somewhat conflicting regulatory concepts and requirements, labour-management indifference to its own and the public's welfare coupled with a lack of competitive spirit on the part of railroads and steamship lines have combined to delay progress.

A tangible reflection of these inadequacies can be found in the substantial diversion of

Straddle crane unloading at the Port of Montreal.



cargoes originating from or destined for the United States to Canadian ports.

From 1969 to 1972 the amount of containerized cargo handled at Canadian National Harbours increased from 863,000 tons to over 4,000,000 and from 6.5 per cent to over 25 per cent of the total general cargo handled. These figures promise to rise rapidly.

Canadian rail carriers looked at international container traffic as new business and set out to obtain it. The incentive rates they established and made available to steamship lines moving containers across rail lines are as much as 40 per cent lower than the rates available for comparable service performed by U.S. railroads.

Canada has obviously made rapid progress in the provision of containership services and terminal development. This has enabled her ports and other maritime interests to thrust forward dramatically in international ocean-borne trade and commerce.

Indeed, it is possible that the changes effected in Canada to accommodate and implement the innovations of containerized shipping will soon serve as models for similar action in other countries, particularly the U.S.A.

And yet a Canadian railway official recently predicted that the domestic container potential was a hundred times greater than the import/export potential.

Canadian National's Vice President of Freight Sales, R.E. Lawless, has also indicated that major advances in domestic container use could be expected and that the domestic system, which had provided the basis for handling foreign trade, would be enlarged, using the experience gained from international operations to develop fully multi-modal transportation systems on the domestic scene.

It is apparent, therefore, that containers — used domestically and internationally — are here to stay. Initial inertia has been superseded by frenzied activity. Meeting of transportation groups have been dominated by discussions of the container revolution and container exhibitions have sprung up all over the world.

Any artifice that can demonstrate improved marketability, speedier transit service, drastically diminished pilferage and damage to goods, reduced cost of packaging and lower inventory requirements merits high priority attention and an accompanying concentration of resources to ensure optimum utilization.

Canada can feel proud that her steadily increasing use of containers has led to innovative design and multiplicity of function in this economic bonanza of the 1970's. Canada is responsible for the development of containers that specifically accommodate sensitive and fragile commodities like hides, glass, paper and, even that uncomfortable traveller, the onion.



Centennial Pier on the south shore of Burrard Inlet showing general cargo berths to the left and container berth to the right with 40-ton container crane in stowed position.

The Ministry of Transport is trying to ensure Canada's pre-eminence in the field of containerization by providing catalysts, guidelines and direction when required.

Canada has signed two conventions arising out of a UN/IMCO container Conference held in December last year and ratification is expected to be given shortly.

With governmental support complemented by private initiative, Canada's leadership in the promotion of this burgeoning transport facility will not falter and she will be rewarded by increasing exploitation of its manifest utility.

dans les coulisses du 23e congrès de l'aipcn

par hélène cyr...

Savoir que le congrès de l'XYZZZ s'est déroulé de zéro à l'infini du nième mois de l'année laisse indifférents la majorité des gens. Les mots congrès et conférence devenus monnaie courante ont subi la dévaluation auprès du public.

Mais le 23e congrès de l'AIPCN (Association Internationale Permanente des Congrès de Navigation) qui s'est tenu du 9 au 18 juillet à Ottawa, échappe à cette règle.

La devise "Navigare Necesse" qui apparaît sur le sigle de l'AIPCN souligne bien l'importance de la navigation dans la vie économique. Cueillie comme l'écu, elle paiera notre passage dans les coulisses du 23e congrès.

L'arrière-scène

Au banquet d'ouverture, le sait-on, l'organisation avait déjà un passé. L'AIPCN, fondée en 1885, se réunit tous les quatre ans. Il avait donc été décidé en 1969 à Paris lors du 22e congrès que le prochain se tiendrait au Canada. Le ministère des Travaux publics, le ministère des Transports et l'organisme Information Canada ont été parmi les principaux agents de l'organisation du Congrès.

Depuis un an, ici au Ministère, une bonne douzaine d'administrateurs y ont consacré une grande partie de leur temps. Au fur et à mesure qu'on se rapprochait de la rencontre, le personnel est allé en augmentant. C'est ainsi qu'on retrouve dans la liste des participants, le Ministre, des ingénieurs, des conseillers en navigation, des économistes, des administrateurs, des rédacteurs, et on en passe. Les résultats: 700 délégués représentants 40 pays, y compris l'Australie, le Japon, le Chili, ont présenté 143 documents dont neuf canadiens.

La scène

Les discussions avaient lieu sur deux scènes simultanément. C'est-à-dire que les délégués avaient le choix selon leur centre d'intérêt de se rendre au Château Laurier ou au Centre des Conférances car les sujets de discussions se divisaient en deux sections: celle de la navigation intérieure et celle de la navigation océanique. Les langues officielles: le français et l'anglais. Cependant les exposés pouvaient avoir lieu dans une autre langue à la condition qu'il y ait un interprète.

Tous les exposés ont été mis sur ruban. Des rapporteurs généraux choisis, un par sujet, se sont chargés de les résumer et de rendre compte des conclusions et recommandations. Le tout sera prochainement relié en un volume.

Il va sans dire qu'une rencontre de cette envergure donne lieu aux préoccupations les plus diverses. Au chapitre de la navigation intérieure, on soulève le problème de la sécurité qui prend, suite à l'accroissement de la dimension et du nombre des navires, des proportions inquiétantes. Le problème du contrôle du trafic par ordinateur lui est adjacent et alors, la proposition allemande de standardiser la sécurité internationale a tout son sens. Autres faits saillants... La conteneurisation a grandement contribué à

l'amélioration des moyens de transport des marchandises diverses. Le progrès connaîtra de nouvelles poussées grâce à l'utilisation croissante des barges d'une part, et d'autre part, à cause de la forte tendance à l'automatisation dans la manutention des marchandises aux ports.

Au chapitre de la navigation océanique, le problème de la pollution saute aux yeux. On insiste sur les qualités de la vie. La question est d'autant plus sérieuse que les prévisions concernant les échanges commerciaux en 1985 révèlent qu'ils devraient tripler par rapport à ce qu'ils sont maintenant. A cet effet, un expert canadien recommande de repenser l'utilisation des voies maritimes et leur terminus et conseille l'étude sérieuse du problème par la voie de la recherche.

Au point de vue des propositions antipollution, on a parlé à la faveur d'un système d'élimination des eaux résiduaires dans le but de protéger surtout les régions du littoral. Cependant, à ce chapitre, le représentant américain déplore le fait que les professions qui sont le plus directement affectées par les problèmes de pollution mondiale n'aient pas suffisamment pris la tête.

Enfin les quelques problèmes qui viennent d'être relatés n'ont pas la prétention de couvrir tous les sujets abordés au congrès. La navigation est un sujet vaste; multiplié par 40 pays, il devient immense. En se ralliant à des points stratégiques, on s'y retrouve. Les experts savent le faire et ils y étaient. La qualité des exposés est reconnue. La majeure partie des délégués sont ingénieurs. Après le congrès, des mesures concrètes sont prises. Plusieurs comités gravitent autour de l'Association permanente une fois le congrès passé. Ils durent le temps qu'il faut pour donner suite aux recommandations.

Le décor

Les exposés théoriques ont trouvé leur pendant dans les visites techniques et, après le congrès, dans les excursions.

Dans les visites techniques, la plus importante est certes celle de l'inauguration du détour du Canal Welland, effectuée le 14 juillet. Les congressistes ont admiré la voie maritime du Saint-Laurent, le plus grand travail de ce genre au monde.

Le nouveau détour du Canal Welland augmentera considérablement le trafic; en y remplaçant les ponts par des tunnels, on a éliminé la triple congestion routière, ferroviaire et navale aux heures d'affluence.

A partir du 18 juillet les délégués avaient trois options d'excursions au Canada: au Grand Nord, à l'ouest et à l'est.

Une vingtaine de congressistes parmi lesquels on comptait Européens, Américains et Canadiens ont opté pour le Nord canadien. Ils ont pu apprécier l'accueil chaleureux des Esquimaux d'Inuvik, connaître la clarté 24 heures durant et voir le soleil de minuit, expérience unique.

A l'excursion dans l'ouest du pays, on comptait 84 personnes de 12 pays différents. A l'unanimité, on s'est étonné de la grandeur du Canada et on en a admiré la beauté. Les visiteurs ont pu voir le parc Banff avec le merveilleux lac Louise, le canyon du Fraser, la ville de Vancouver, et à bord du "Malibou Princess", son port de même qu'une partie de la côte ouest du Pacifique. On comprend pourquoi les invités ont tenu à prendre beaucoup de photos.

L'excursion qui conduisait à Halifax a réuni environ 125 personnes. On rapporte que les visiteurs ont été impressionnés par la qualité des travaux du détroit de Canso en Nouvelle-Ecosse.

Prochaine représentation

Les bienfaits de l'AIPCN, organisme qui sera centenaire en 1985, sont croissants. Les services qu'elle rend vont de pair avec les développements de la navigation.

En navigation, un problème n'est jamais proprement sectoriel. Envisagé d'un point de vue intermodal, ses chances de résolutions et de cohabitation harmonieuses avec les autres modes de transports, qu'il s'agisse du camionnage du rail ou de l'aviation sont grandes.

Enrichis des connaissances les plus nouvelles ou confirmés dans le savoir déjà acquis, les délégués ont levé l'ancre.

Mais ça ne finit pas comme ça, la prochaine représentation aura lieu en Russie, à Léningrad, en 1977.



En compagnie de M. Gustave Willems, président de l'Association internationale des congrès de navigation, et de l'hôtesse Guinella Hintze, le ministre des Transports, M. Jean Marchand, admire ici l'une des pièces d'exposition offertes à la vue des congressistes.

Transport Minister Jean Marchand met with chief delegates to the Twenty Third Congress of PIANC held in Ottawa July 9 to 18. With him during a tour of a marine exhibition were Gustave Willems, president of the International Association of Navigation Congresses and hostess Guinella Hintze of MOT's Marine Operations Branch. More than 700 marine experts from 40 countries attended the congress which is held every four years.

23RD PIANC CONGRESS

Dans le cadre de l'une des excursions organisées à leur intention, les délégués se sont rendus au Centre d'information de la circulation maritime du ministère des Transports à Eddy point (N.-E.).

PIANC, founded in Brussels in 1885, is the world's oldest and largest organization concerned with the improvement of inland and ocean navigation. During post congress tours, a group of delegates visited the MOT Traffic Information Centre at Eddy Point, N.S., hub of operations for the Canso Strait traffic surveillance system.



new post for dr. pierre camu



Dr. Pierre Camu is leaving the Ministry of Transport to become President of the Canadian Association of Broadcasters. John Cooke of the St. Lawrence Seaway Authority presents an Eskimo sculpture to Dr. and Mrs. Camu.

Dr. Pierre Camu, Administrator of the Canadian Marine Transportation Administration since 1970, has been named President of the Canadian Association of Broadcasters, based in Ottawa.

In accepting this important position, Dr. Camu is departing from both the Public Service and the St. Lawrence Seaway Authority which he has served for the last thirteen years as Vice-President and President.

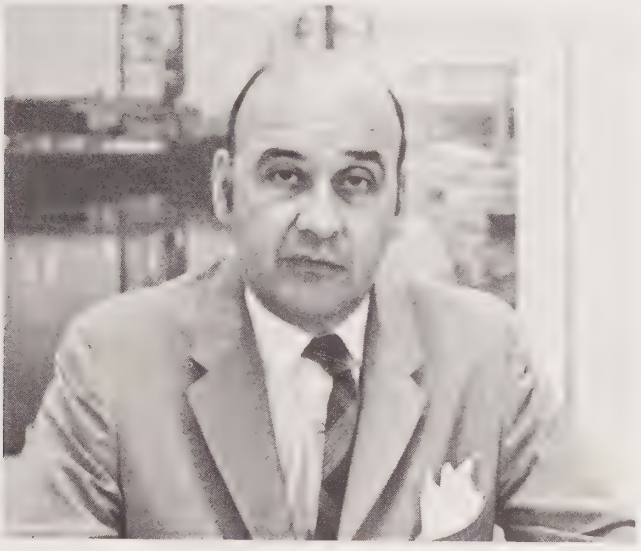
Born in Montreal in 1923, Dr. Camu studied at the Collège Ste-Marie and graduated from the University of Montreal in 1947 with a Master of Arts in history and a Licence ès Lettres in History and Geography. From 1947 to 1949, he carried out post-graduate research in geography and economics at John Hopkins University in Baltimore and was awarded a doctorate in economic geography by the University of Montreal in 1951.

Dr. Camu's career goes back to 1949 when he joined the Federal Department of Mines and Technical Surveys, Geographical Division. He left Ottawa seven years later, in 1956, to join the staff of Laval University in Quebec as professor of economic geography and later became Director of the University's Faculty of Commerce Research Centre. During the summer months, he was engaged in consulting work with numerous organizations in both Eastern Canada and the United States, and in 1958, on a Nuffield Foundation fellowship, carried out a study of ten major British Sea ports.

Dr. Camu undertook one of the most important tasks of his career in 1960 when he was named Vice-President of the St. Lawrence Seaway Authority. He became president of the Authority five years later and continued in this position following his appointment as Administrator, Canadian Marine Transportation, with the Ministry of Transport in 1970.

Dr. Camu was appointed a Fellow of the Royal Society of Canada in June 1966 and in September of the same year, President of the Canadian Transportation Research Forum. In February 1967, he was elected President of the Royal Canadian Geographical Society and in 1968, received a Doctorate in Geography (honoris causa) from the University of Ottawa. In July 1970, he was appointed Life Fellow of The Royal Society of Arts.

Dr. Camu is married to Marie-Marthe Trudeau of Montreal. They have three children.



nouveau poste pour le dr pierre camu

Le docteur Pierre Camu quitte son poste au ministère des Transports afin de relever un nouveau défi comme président de l'Association canadienne des radiodiffuseurs.

M. Pierre Camu, administrateur de l'Administration canadienne des transports par eau depuis 1970, a été nommé président de l'Association canadienne des radiodiffuseurs, dont le siège social est à Ottawa.

En acceptant cette nomination importante, M. Camu quitte la fonction publique ainsi que la présidence de la Voie maritime du Saint-Laurent, poste qu'il cumulait avec ses fonctions d'administrateur au ministère des Transports.

Né à Montréal en 1923, M. Camu a fait ses études secondaires au Collège Ste-Marie et des études universitaires à l'Université de Montréal d'où il obtenait une maîtrise ès arts en histoire et une licence ès lettres en histoire et géographie en 1947. Il fit des recherches post-universitaires en géographie et en économie à l'Université John Hopkins de Baltimore et obtint un doctorat en géographie économique de l'Université de Montréal en 1951.

La carrière de M. Camu débute en 1949 au ministère fédéral des Mines et Relevés techniques, division géographique. Sept ans après, en 1956, l'Université Laval l'embauche comme professeur agrégé de géographie économique et directeur du Centre des recherches de la faculté de Commerce. Pendant les mois d'été, il agit comme aviseur auprès d'importants organismes dans l'est du Canada et des Etats-Unis, et en 1958, grâce à une bourse de la Fondation Nuffield, il fait une étude des dix principaux ports de la Grande-Bretagne.

M. Camu quitte le milieu académique en 1960 pour accepter la vice-présidence de l'Administration de la Voie maritime du Saint-Laurent. Le 1er août 1965, il est nommé président de cette même administration ainsi que président de la Seaway International Bridge Corporation Ltd.

M. Camu est devenu membre de la Société Royale du Canada en juin 1966 et en septembre de cette même année, président du Groupe de recherches sur les transports au Canada. Au mois de février 1967, il fut élu président de la Société géographique royale du Canada et en 1968, l'Université d'Ottawa lui décernait un doctorat d'honneur en géographie. En juillet 1970, il fut nommé fellow à vie de la Société royale des Arts.

M. Camu est marié à Marie-Marthe Trudeau de Montréal et est le père de trois enfants.

NEW POTENTIAL FOR...

by R.G.Wade,
Superintendent,
A.C.V. Engineering

Icebreaking has always been one of the more demanding tasks facing the Canadian Coast Guard. Now, almost by accident, Ministry of Transport researchers have discovered that Air Cushion Vehicles have excellent potential in the icebreaking field.

In tests during the past two winters, a heavy lift air cushion transporter (ACT-100) has broken ice as thick as 27 inches continuously while moving at about four to five miles per hour. The feat may not seem so remarkable until one considers that the ACT-100 has a crew of two and engine of less than 2,000 horsepower. To achieve similar results, an icebreaking ship would have a crew of more than 50 and an engine of more than 10,000 horsepower.

Much of the experience to date has been gained from trials to assess the feasibility of operating an air cushion ferry for water crossings in the all-season Mackenzie Highway. There has also been limited opportunity to use the Canadian Coast Guard's other Air Cushion Vehicle, the SRN-5, at Vancouver to learn its capability to break ice, and in this instance, about two inches of ice was broken at a speed of around 10 knots.

The A.C.V. is not a sea-going vessel, but the potential for significant icebreaking by the use of air cushion vehicles has been demonstrated and the future appears to be wide open.

As is the case with many "technical breakthroughs", experts cannot yet fully explain the mechanisms causing this new phenomenon, but it appears at present that there are two methods by which ice can be broken by air cushion vehicles. To understand these, a brief look at how an air cushion vehicle affects the water surface is necessary.

All air cushion vehicles operate essentially in one of two speed modes — either as a displacement vessel, or as an air cushion vehicle. The boundary between them is known as "hump speed", which varies with the size of the A.C.V., but which is generally below 20 knots. In the displacement mode, the A.C.V. displaces water beneath it to a depth equal to the cushion pressure. In self-propelled high speed A.C.V.'s cushion pressure is generally low, and the water displacement rarely exceeds nine inches.

For heavy lift transporters, which always operate in the displacement mode, the water displacement is usually more than 20 inches. As speed increases towards hump speed, the water depression moves with the A.C.V., creating a large wave system which travels with it. At "hump" speed this wave is at a maximum, and above it, the A.C.V. speed is too high for the depression to have time to form, and virtually no waves are generated.

Approaching the edge of the ice from water travelling at just below "hump" speed, causes the large wave system to travel under the ice and break it. This method has been employed, using the CCG SRN-5, to break ice up to 2 inches thick. It is probably restricted to breaking ice less than a foot thick.

The other method is to use a heavy transporter which depresses the water surface at least to the bottom surface of the ice sheet. When the A.C.V. reaches the edge of the sheet, the air travels under the ice, removing all the buoyant force of the water and the ice then breaks under its own weight. Using this method, the ACT-100 heavy transporter, with a cushion pressure of

one pound per square inch, has broken ice 27 inches thick.

Potentially an icebreaking package could be mounted on the bow of an ordinary vessel so that it could break its own path. For a large ship the package would probably weigh about 200 tons or so, and would consist of a framework extending the width of the ship, carrying a power unit and fans to supply the air, and supporting the skirt. Some ships, such as ferries, may have an overhanging bow which would act as the skirt support, and the fans and power unit could be carried on the ship.

A relatively small icebreaking A.C.V. could be provided in small harbours with small volumes of winter traffic and activated when the need arose. The economics of such a scheme appear to be tremendous compared with the current practice.

The Air Cushion Vehicle Division of the Ministry of Transport is actively engaged in developing the use of this technology as rapidly as the seasons permit. An interdepartmental working group has been formed and includes experts from The National Research Council and The Department of The Environment, an experienced Coast Guard captain and a representative from The Transportation Development Agency. Through this group, it is hoped to mount trials this coming winter which will provide sufficient documented evidence to allow serious consideration of a specially designed icebreaking A.C.V. for the 1974-75 season. Along with this, it is hoped to have a theoretical analysis carried out so that the design of such a vehicle can be optimized as far as possible.

At some time in the not too distant future, we may be achieving the impossible regularly, as one interested expert put it, by "breaking ice without actually touching it".

The heavy lift air cushion transporter, ACT-100, undergoing icebreaking trials has broken ice as thick as 27 inches. These tests show new potential for air cushion vehicles in the icebreaking field.



AIR CUSHION VEHICLES



Number 1057 ready to roll.

ALL ABOARD 1057

by COLIN CHURCHER

In the Railway Branch of the Surface Administration we expect to deal with a wide variety of subjects, all related to a greater or lesser degree with railways.

It did rather take me back, however, when a friend in the National Capital Commission phoned me one day in mid-April and said point blank, "We need an operating steam locomotive for tourist excursion trips to Wakefield and we need it by July 1st at the latest".

Steam locomotives in operating order are rather hard to find these days; but it anyone knew where to find one, Duncan duFresne, of the Air Traffic Control section of the Air Administration would be the man. Duncan told me there was an outside possibility that a group in Toronto might have a steam engine. Several phone calls later, I discovered that the Ontario Rail Association had an operating steam locomotive, No. 1057, and could make available for the summer.

Next thing I knew I was seconded to the National Capital Commission to co-ordinate its efforts to set up a steam train operation and handle the thousand and one details that were bound to crop up.

The next person on the scene was John Corby, Curator of Industrial Technology at the Museum of Science and Technology. This was to be a joint venture of the NCC and the Museum with John to store and look after the locomotive at the Museum during her stay in Ottawa.

At about the same time that we reached an agreement with the owners of the locomotive and CP Rail, heavy rains and a mud slide destroyed part of the line to Wakefield. With no hope of being able to use that line we searched for an alternative destination and finally decided on Carleton Place.

Our July 1st starting date began to loom dangerously close and there were still many details to be settled. The Bytown Railway Society agreed to clean and prepare the locomotive, while Duncan duFresne's experience was to prove invaluable when it came to details of steam locomotive operation, much of which is only now dimly remembered by the majority of railroaders.

The nearest source of good quality coal with a very high calorific content suitable for a hand-fired locomotive is West Virginia. I ordered a carload and it arrived about five days before our first trip.

No. 1057 arrived in Ottawa a

week before our operation was to begin. The last major job was to attach the connecting rods. This big job, done by hand, was accomplished with the co-operation of the Museum Staff and Bytwon Railway Society. To do one side it was necessary to move the 175 ton locomotive — by hand!

The great day dawned and although the CPR engineer and fireman had not handled a steam locomotive for about fifteen years, Duncan duFresne was on hand to help ensure that 1057 performed flawlessly. The sight of the many old folks who had come out to revive old memories, many of them with grandchildren who had never before seen a live steam locomotive, made the whole project worthwhile. I received a reward of a very different kind. I had expressed the desire to fire up 1057 — just to prove I could do it. So it was that on one Sunday in July, I found myself in the cab under the watchful eyes of Duncan deFresne. I had to keep the fire quite thin over most of the grate and well built up at the back and at the same time maintain the boiler pressure close to 200 pounds per square inch and the water well up in the boiler. As we started to move I was hard at work on the deck with the scoop, left foot on the pedal which opens the firedoor, scoop in, scoop out, foot off, another shovelful and so on. As we began to move through one of Ottawa's finest residential areas a tap on the shoulder indicated that I was making too much black smoke.

I vaguely remember crossing the Rideau River and waving to the startled crew of a CNR freight before the climb up the grade through Nepean Township. The fire was now white hot and although I could not see more than six inches past the doors I gingerly stoked the coal. We made it to the top of the grade with plenty of steam, and I was able to relax a little — — unfortunately a little too much, for with the boiler pressure down I had to shovel madly all the way to Carleton Place.



Duncan DuFresne of ATC checks gauges.

The block signal at Carleton Place came into view and soon we were steaming into the station past hundreds of onlookers. I was hot, dirty and tired, but the sight of those happy people made it all worthwhile.

The author hard at work on the business end of the coal shovel under the scrutiny of a CP regular crewman.









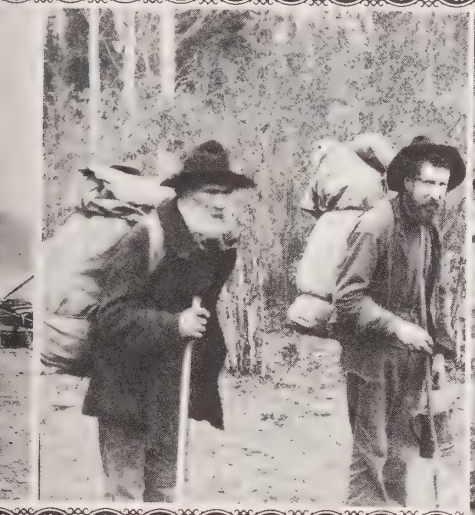
North by Northwest ~ N

Seventy-five years ago the interiors of Northern British Columbia and the Yukon were accessible, but just barely. Travellers used all modes of transport from barge, to stage-coach, to steer. Engineers working on a railway route location survey took more than 700 photographs to accompany their report. These photographs were recently "rediscovered" and turned over to the National Archives Photographic Collection for preservation. Some of these are featured here:











ages d'antan dans le Nord

y a soixante-quinze ans, l'intérieur
u nord de la Colombie-Britannique
t le Yukon étaient à peine accessi-
les. Les voyageurs utilisaient tou-
es sortes de moyens de transport
omme les chalands, les diligences
t les boeufs. Les ingénieurs qui ont
tabli le tracé de la voie ferrée, ont
ris plus de 700 photographies et les
nt intégrées à leur rapport. Ces
hotographies ont été récemment
redécouvertes" et confiées à la col-
ction photographique des Archives
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ent dans les pages suivantes.



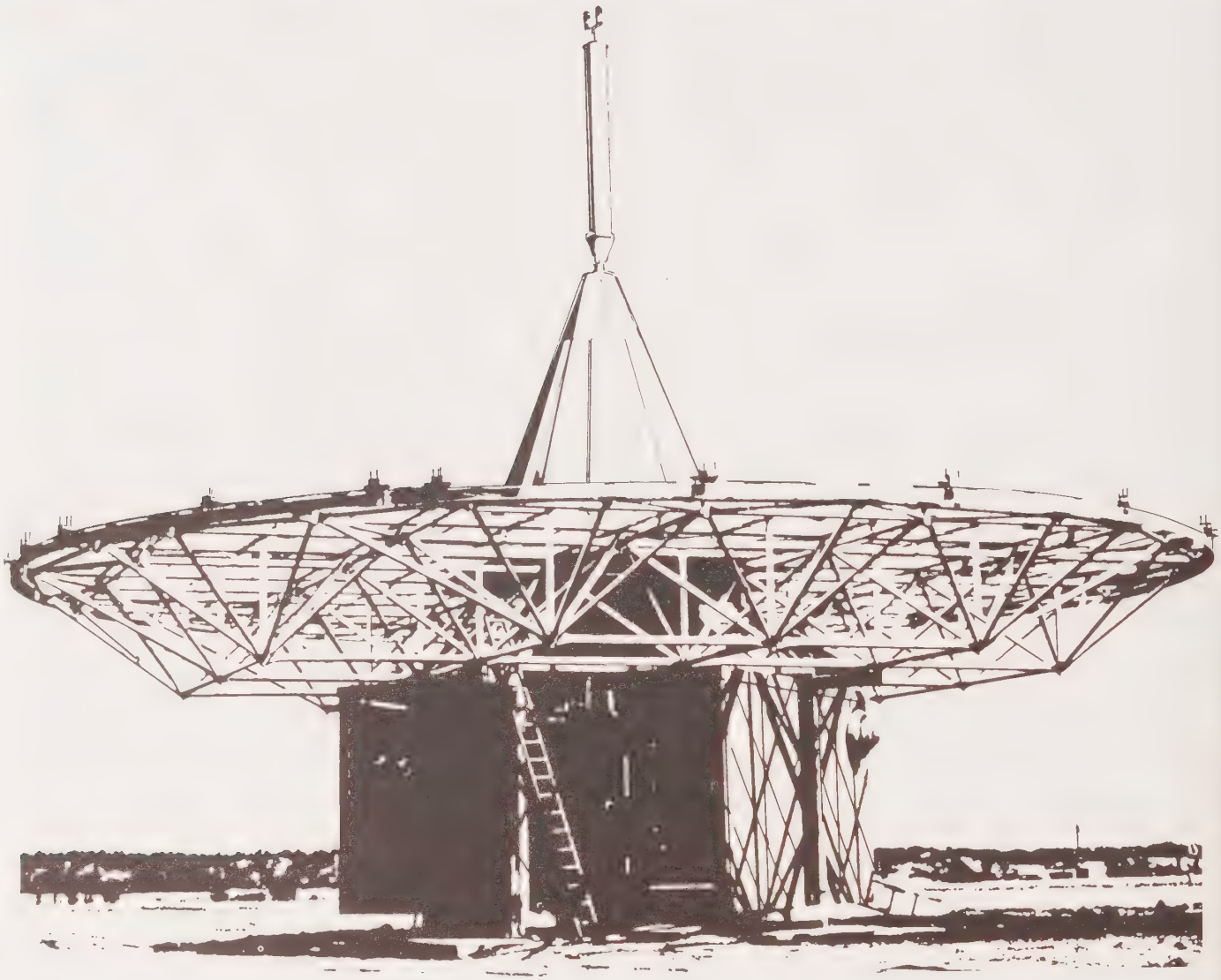






ARCTIC MUSHROOMS

by Bill Tweedie



The Arctic mushroom is in reality the latest in navigation aids for flying in Canada's north. The VOR/DME package can be air freighted to its destination and erected with a minimum of skilled labour and equipment.

Strange structures that bear the appearance of mushrooms will soon be dotted all over Canada's north, guiding pilots over the Arctic hinterland.

The first VOR/DME navigation aid system, erected last winter in Cambridge Bay, is the fore-runner of at least 15 similar systems that will be erected within the next five years.

VOR/DME is a combination of two navigational aids which are extensively used on heavily travelled air routes around the world. The "V"ery high frequency "O"mni-directional radio "R"ange (VOR) provides bearing information, and track guidance to aircraft equipped with the necessary VOR receiving equipment. The "D"istance "M"easuring "E"quipment (DME) provides suitably equipped aircraft with information as to their distance from the DME station. The combination of these two pieces of information from a colocated site provides an aircraft with a 'fix' of its position.

Until recently the use of these navigational aid systems was limited to heavily travelled air routes, principally because the cost and bulk of the necessary airborne equipment limited their

use to commercial airliners. In addition, the complex ground equipment required frequent maintenance by highly skilled personnel and a large amount of power to operate. As a result sites had to be located reasonably close to populated communities.

Continual progress in the electronics field has produced compact solid state airborne equipment at a price more attractive to those who operate small planes in the North. Similar improvements in the ground equipment have produced highly reliable equipment requiring less maintenance and power.

Unfortunately the conventional construction techniques employed to build VOR/DME facilities in the southern areas, using brick, concrete, and steel, are not compatible with construction in remote Arctic areas due to high transportation costs and a lack of local materials, and heavy construction equipment. The building must be more than just a shelter for equipment. The 40-foot diameter circular roof (counterpoise) forms an important part of the antenna system. So something more than a prefabricated 'house trailer' is required for Arctic installations.

The Ministry's Air Administration and Arctic Transportation Agency decided in 1971 to begin a program of VOR/DME installations in the Arctic. Derek Evans and John Cianfagloine of the Telecommunications Branch and Don Cormier of the Construction Engineering and Architectural Branch, developed the concept and design of what is now called the "Arctic VOR/DME Package".

Such a package must be large enough to house the electronic equipment and a Deisel electric emergency power unit; it must meet the latest technical requirements for a VOR/DME installation, and be rugged enough to withstand the severe Arctic environment. It must be portable to allow for air-shipment to remote locations and simple enough to construct on permafrost soils with a minimum of skilled labour and equipment.

The package consists of a 16-foot square prefabricated building, composed of plywood insulated panels, supported in the middle of four steel columns. The 40-foot diameter counterpoise consists of expanded mesh panels, mounted on top of a triodetec space frame which is supported by the steel columns. The package is delivered in a knocked-down form, and can be transported by Hercules aircraft to anywhere in the Arctic where Hercules can land. The only tools required for construction are wrenches and hide-faced hammers. It can be erected by a crew of seven men in twelve days, compared to the usual months of construction time taken by a contractor to build a VOR/DME by conventional methods in the south.

With the advantages of portability and relocatability, lower costs due to bulk purchase, shorter erection time, and the advantages of a standard installation, there is a distinct possibility that this concept of a VOR/DME packages installation will someday be utilized as the standard VOR/DME installation in other parts of the country.

A giant air dome protects equipment and men during the construction phase of the new VOR/DME navigation aid system for the Arctic.



Interdepartmental Co-operation Speeds Airport Arrivals

All passengers want to get off an airplane and out of an airport terminal as fast as possible with the least amount of fuss and bother.

The formation of the Interdepartmental Inspection Services Committee in 1966 was the first move to speed up the arrivals of passengers from other countries at Canada's major airports.

The committee is an outgrowth of a successful pilot project at Montreal International Airport when customs and immigration checks were combined for the rush of visitors to Expo 67.

The Interdepartmental Inspection Services Committee is composed of representatives of the Ministry of Transport, the Departments of Health and Welfare, Manpower and Immigration, Customs and Agriculture; the Canadian Transport Commission, Treasury Board, the Office of Tourism and, CP Air and Air Canada. All are working together to get the passenger readily on his way.

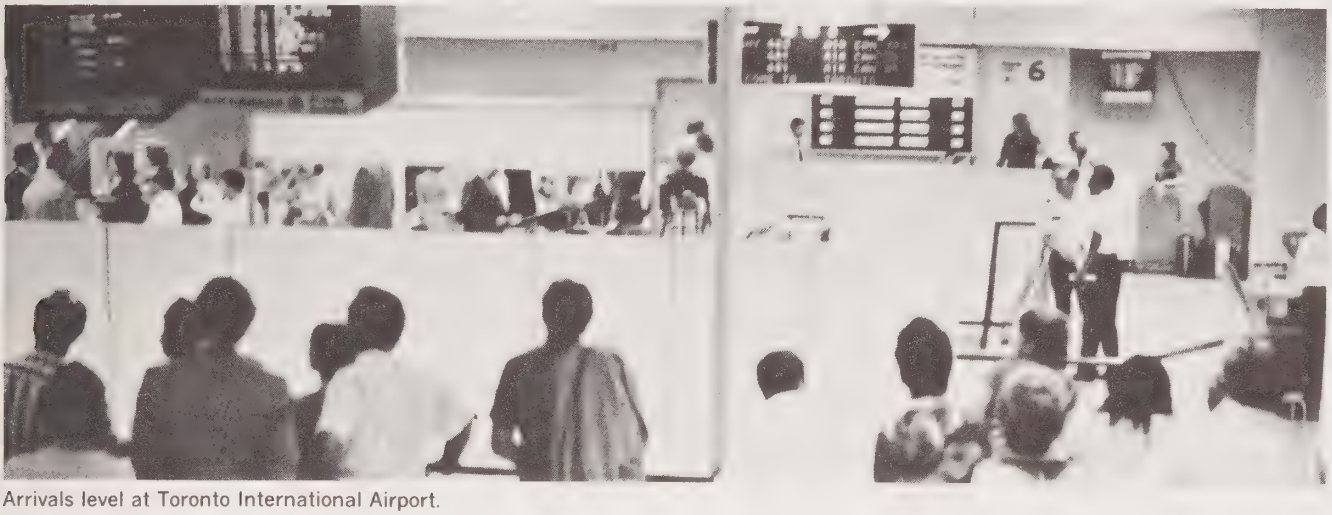
The Committee's most successful work to date has been the establishment of the Primary Inspection Line. P.I.L. passengers are interviewed on arrival by customs officers to determine if they owe duty on goods, are carrying any agricultural products, or whether they may be in violation of health or immigration regulations. A passenger who is clear on all counts then may pass through the P.I.L. to pick up his baggage and leave the terminal. Others are referred to the appropriate department if necessary for a secondary examination.

After a test at Dorval, P.I.L. was further refined in 1970 and established at Toronto and Vancouver. Today it is also in operation at Halifax and Gander and is now being introduced at Winnipeg, Calgary and Edmonton. It will also be set up at the New Montreal Airport at Mirabel. IDISC is very much concerned with the design of the Inspection Services areas at existing and future airports. The committee works with designers and architects so that the minimum amount of space is used without any loss to passenger flow or cramping of inspection services staff. Also, IDISC is continually improving and refining the P.I.L. system.

Members of the committee travel extensively throughout Canada and abroad to gather the latest techniques for adaptation at Canadian international airports. A new idea is always tried out first as a pilot project to see if it can be adapted to Canadian operations. For instance, a project under way this year at Dorval aids tourists and immigrants, helping them with language difficulties and generally providing a cordial reception together with any information they may request. Extensive travel also enables the mem-



BIENVENUE AU CANADA
CANADA WELCOMES YOU
BIENVENIDOS A CANADA



Arrivals level at Toronto International Airport.

bers to keep in touch with the field, maintaining and improving the system through training seminars and contacts with airline operators.

A policy board was formed in 1971, consisting of eight assistant deputy ministers to set operational policies, approve IDISC activities and allocate funds within member departments and agencies.

Operating under the policy board is the Planning and Research Group of IDISC, composed of members from eight government departments and the two airlines, who meet several times a year. Committee members go out into the field to study and record, improve and refine, recommend and implement all manner of changes in the processing of passengers from abroad. Not only do the members of the Planning and Research Group act for their own individual departments, but they also represent IDISC as a whole; the problems of one department becoming the problems of all.

Co-ordinating the efforts of the committee is a permanent Secretariat, attached for administrative purposes to the Ministry of Transport, but remaining free and independent of any one department. The Secretariat reports only to the committee and its chairman.

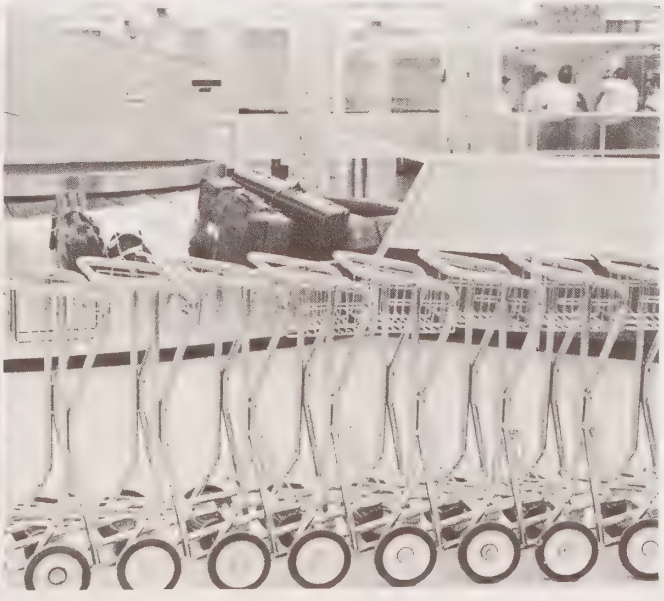
Co-ordinators of Inspection Services are appointed at the airport level to oversee inspection services operations at the airport and to route problems which cannot be solved locally to the committee via the secretariat.

Various systems are constantly reviewed and refined to bring about the most efficient method of greeting international passengers, and allow them to make their way from the plane through the terminal as quickly as possible, without fuss or bother.

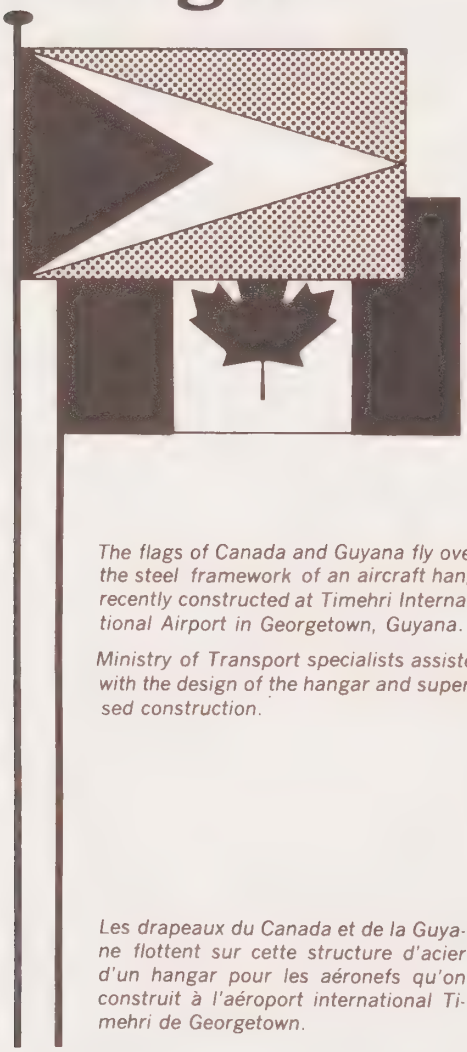
The Primary Inspection Line facilities at Gander International Airport.



The Ministry of Transport has introduced push-carts so passengers can more easily transport their luggage in all of Canada's major airports.



Ministry Specialists Design Guyanese Hangar



The flags of Canada and Guyana fly over the steel framework of an aircraft hangar recently constructed at Timehri International Airport in Georgetown, Guyana.

Ministry of Transport specialists assisted with the design of the hangar and supervised construction.

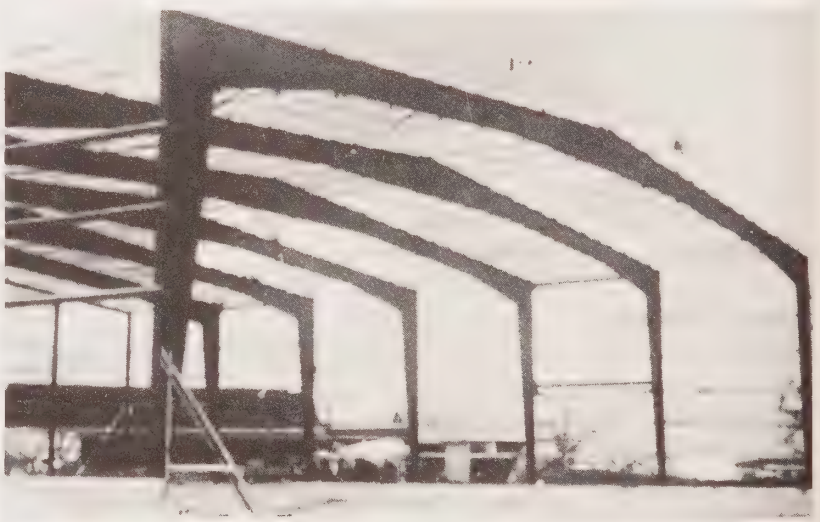
A cooperative venture of the Canadian International Development Agency, the government of Guyana, a Montreal contracting firm and the Ministry of Transport's Air Services Construction Engineering and Architectural Branch has provided a much-needed hangar and maintenance base for Timehri International Airport in Georgetown, Guyana.

The facility which will be used by the Guyana Airways Corporation, can accommodate ten aircraft simultaneously, and also provide workshops and offices for storage, overhaul and maintenance.

The High Commissioner for Canada, John A. Styles, recently joined the Guyanan Minister of Works and Communications, Desmond Hoyte, in opening ceremonies for the half-million dollar facility which was planned, designed and construction supervised by Ministry of Transport specialists.

Air service is vital to the population of Guyana because 75 per cent of the country's inhabitants live on the coast and are separated by 250 miles of jungle and mountains from the interior plains which supply most of the country's food and raw materials. The airline transport food products, raw rubber, minerals and gems from the interior to Georgetown and New Amsterdam on the coast. Before the new facility was built the airline was forced to use old buildings and hangars that were constructed during the Second World War.

The Canadian contractor for the project which was funded by CIDA was J. G. Fitzpatrick Construction Ltd., which used a totally Guyanese labour force. Construction was completed eight months after breaking ground under the supervision of project manager William Parker, and Ken Williams of the Air Administration's Engineering and Architectural Branch.



Participation canadienne à un projet de la Guyane

Les drapeaux du Canada et de la Guyane flottent sur cette structure d'acier d'un hangar pour les aéronefs qu'on construit à l'aéroport international Timehri de Georgetown.

Dans le cadre d'un programme d'aide de l'Agence canadienne de développement international, deux employés de la Direction du génie, de la construction et de l'architecture de notre Ministère, MM. William Parker et Ken Williams, ont apporté leur concours au gouvernemtnt de la Guyane dans la construction de certaines installations aéroportuaires à l'aéroport international Timehri de Georgetown.

La réalisation de ce projet dont le besoin s'était fait sentir depuis longtemps dans ce pays où l'aviation joue un rôle presque vital, permettra à la *Guyana Airways Corporation* d'y loger dix aéronefs et d'y disposer de l'espace nécessaire à l'entretien de ses appareils.

transcan-mini-reportage



A multi-million dollar flotilla of seven tugs and 25 barges undertook an historic 4800 mile voyage from Vancouver to Hay River this summer to unlock the resources and transportation potential of the Arctic. The vessels owned by the Northern Transportation Company and Arctic Transportation Limited were the first of such magnitude to travel as far north. In the past vessels built for Northern Transportation were prefabricated and shipped by rail for assembly at Hay River.

Une flottille de sept remorqueurs et de vingt-cinq barges, évaluée à plusieurs millions de dollars, a quitté Vancouver pour se rendre à Hay River cet été, un voyage de 4800 milles. Historique, cette expédition ouvre une nouvelle ère dans la mise en valeur des ressources et des possibilités de transport dans l'Arctique. Ces navires, propriété de la Northern Transportation Company et de la Arctic Transportation Limited, sont les premiers de cette importance à se rendre aussi loin dans le Nord canadien. Dans le passé, les navires destinés à la Northern Transportation étaient préfabriqués et transportés par rail à Hay River où ils étaient assemblés.

Royal Train Steward Honoured by Queen ...

A man who has served six Sovereigns and eight Governors-General was recently presented with the Order of Canada by Queen Elizabeth.

Wilfred Notley served 30 years as chief steward on the "Royal Train." Mr. Notley retired five years ago, but was called out of retirement to don the uniform once more during the recent Royal tour of southern Ontario.

Mr. Notley served on six royal tours, his first being the 1939 visit of King George VI and Queen Elizabeth. He began as steward in charge of the Governor-General's car in 1937 under Viscount Willingdon, the first Governor-General he served.

As chief steward, Mr. Notley was responsible for greeting his regal passengers on board the train, preparing the daily menus, ordering the wine and overseeing all food preparations. "With silver service, linen and finger bowls the Royal car is just like a first-class hotel," he says with pride.

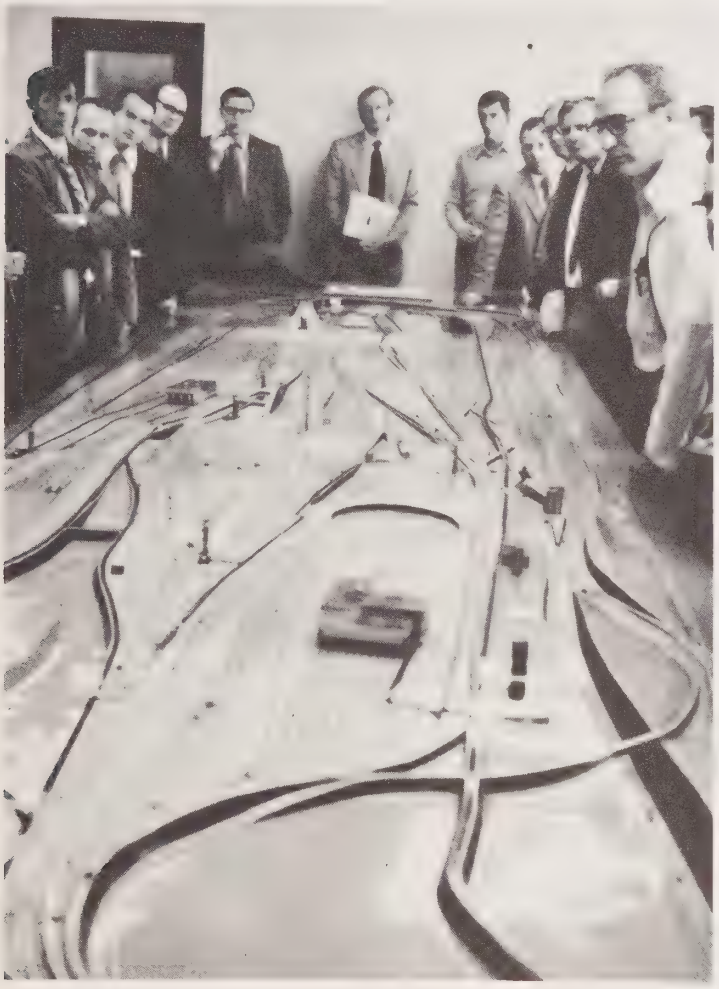
After the Ottawa ceremony, where he received the Order of Canada, Mr. Notley returned to his retirement home near Larrimac, Quebec.



Au service de sa Majesté...

Employé du Canadien National et du gouvernement pendant 47 ans, M. William Notley fut maître du train royal durant 30 ans et, à ce titre, au service de huit gouverneurs généraux et de six souverains en visite au Canada. Au service de sa Majesté, il l'a donc vraiment été!

Ses mérites, la reine Elizabeth II a voulu les souligner elle-même en lui remettant la médaille de l'Ordre du Canada lors de sa dernière visite au pays. Cette médaille sera un autre des nombreux souvenirs ou cadeaux royaux que M. Notley pourra admirer à sa résidence de Larrimac (Qué.) où il s'est retiré.



Course One: Members of the Transportation management course travelled from Queen's University in Kingston to inspect air, trucking, rail, and port facilities in the Montreal area, including a model of CNR facilities at Côte St-Luc. ▲

Transportation Management Course

The Ministry of Transport in 1972 established the Transportation Management Course for senior managers within the Ministry.

The six-week course is designed to give course members an appreciation of the multi-modal nature of transportation in Canada. The course conducted by the Training Branch in Ministry Headquarters draws upon the resources of Canadian universities, senior executives from the Ministry, other government agencies, crown corporations and the transportation industry.

Course members participate in major research projects which they present in syndicate format to senior executives at course end and also take part in a field trip to view at first hand features, facilities and operating technology of various transportation systems.

Course Two: The second Transportation management course working from the Regina Campus of the University of Saskatchewan visited facilities at Winnipeg, Regina, Yellowknife, Inuvik, Tuktoyaktak, and Hay River where they got a close look at the Voyageur hovercraft. ▼



Suggestion Awards



Following the presentation of a $1500 Suggestion Award by D.J. Dewar, Western Regional Administrator, O.W. Ottmanns is congratulated by R.M. Bennett, Regional Manager, Telecommunications and Electronics. Mr. Ottmanns suggested replacing the capstan motor in the dictaphone FSH-1001 Multi-channel Tape Recorder with a slower speed motor, thus cutting by half, the amount of recording tape required.

Le directeur régional des télécommunications et de l'électronique, M. R.M. Bennett, félicite M. Oltmanns à qui l'administration de la région de l'Ouest, M. D.J. Dewar, vient de remettre une prime à l'initiative de $1 500. M. Oltmanns a suggéré de remplacer le moteur à poulie du dictaphone FSH-1001 (magnétophone à pistes multiples) par un moteur plus lent, ce qui réduit de moitié la quantité de ruban magnétique à employer.

A suggestion award of $175 has been made to S.R. Chapley of Winnipeg for his design of a printed circuit board interface unit to be used at TAM Centres

Une prime à l'initiative de $175 a été accordée à M. S.R. Chapley de Winnipeg qui a conçu une plaquette à interface de circuit imprimé pour utilisation dans les centres TAM.

George W. Townsend of Toronto was awarded $125 for his suggestion that transite pipe not be used when involving treated water to zero hardness in future installations at Toronto International Airport.

M. George W. Townsend de Toronto a reçu une prime de $125 pour avoir suggéré de ne pas utiliser de canalisation en fibre (Transite) pour l'eau traitée (dureté zéro) dans les futures installations de l'aéroport international de Toronto.

Primes à l'initiative

A suggestion award of $160 was presented to Leonard King for his suggestion for modifications of drain line for foam trucks at Winnipeg International Airport

Une prime à l'initiative de $160 a été présentée à M. Leonard King qui a suggéré d'apporter des modifications aux tuyaux de vidange des camions à mousse à l'aéroport international de Winnipeg.

Bernard Drapeau, of Ste. Foy, Quebec received a suggestion award of $135 for proposing the regulating of voltage fed to lone amplifiers to prevent short-circuiting on radio-telephones on Coast Guard vessels

M. Bernard Drapeau de Sainte-Foy, au Québec, a reçu une prime à l'initiative de $135 pour avoir proposé de régulariser la tension d'alimentation des amplificateurs pour empêcher les courts-circuits sur les radiotéléphones des navires de la Garde côtière.

Mr. Thomas Clegg, Thunder Bay, Ontario, $100.00

Mr. D.C. Clyde, Kingston, Ontario $90.00

Mr. E.J. Ward, Wiarton, Ontario, $90.00

Mr. J.E. Henderson, Penticton, B.C., $60.00

Mr. P.H. Ablitt, Prince Rupert, B.C., $60.00

Mr. S.E. Livingston, Campbellville, Ontario, $50.00

Mr. G.C. Grant, Calgary, Alberta, $50.00

Mr. V.E. McMann, Delta, B.C., $50.00

Mr. F.J. Sagriff, Winnipeg, Manitoba, $50.00

Mr. D.G. Thorne, Gander, Newfoundland, $50.00

Mr. J.F. Wood, Winnipeg, Manitoba, $50.00

Mr. R.J.A. Leduc, North Bay, Ontario, $50.00

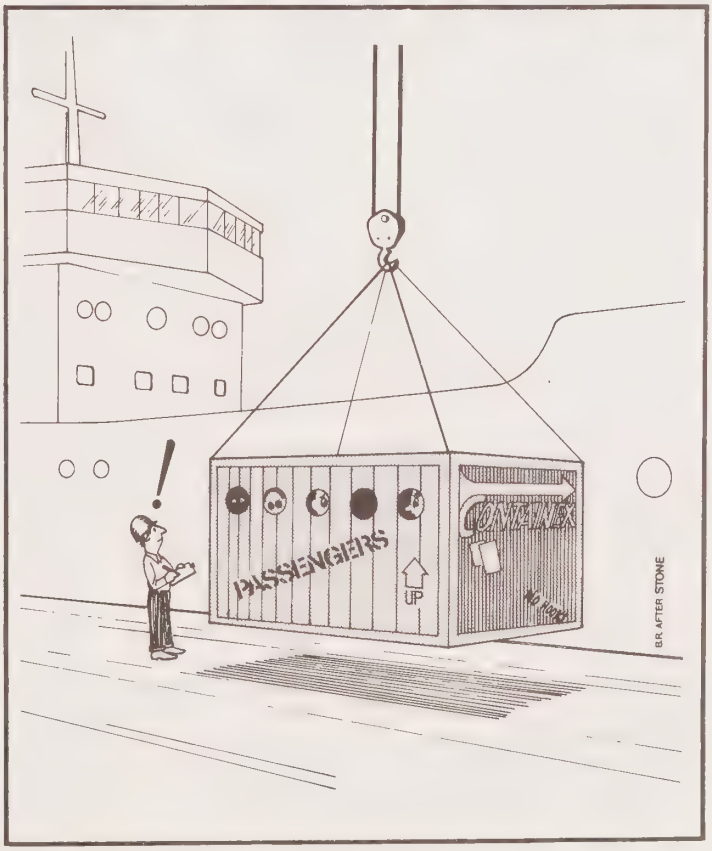
Mr. Lloyd Bishop, St. John's Marine-Aeradio, $40.00



▲
You can containerize anything these days. CP Ships' container vessel, "CP Voyageur" docked at Quebec with three young giraffes on board alive and well, in a 20-foot container. The animals, zoo-born in England were on their way to "African Lion Safari", a large 500-acre drive through zoo near Hamilton, Ont. The three young giraffes, Tina, Teresa and Tom, take a moment to say hello to their new owner, Don Dailley, assistant manager of the zoo, who was at the dock to greet them.

Même si la plupart d'entre nous sont convaincus depuis longtemps des avantages de la conteneurisation, très peu auraient cru en la possibilité de transporter trois jeunes girafes nées en Angleterre à un zoo près d'Hamilton dans un conteneur de 20 pieds.

TERMINAL 2 ?





During the last weeks of August in Toronto, hundreds of thousands of visitors to the Canadian National Exhibition flocked to Transport Canada's display, one of the largest ever entered by the Ministry in the major exhibitions circuit. Entirely devoted to motor vehicle safety, the display featured an island of sixteen panels promoting road and motor vehicle safety, a model demonstration car equipped with advanced safety devices and a continuous film presentation highlighting tests carried out to develop better safety standards.

Présent à l'Exposition nationale du Canada qui s'est déroulée à Toronto au cours des dernières semaines d'août, le ministère des Transports a illustré son travail dans le domaine de la sécurité routière et automobile.



Gordon Stevens, Supervisor of Aids Technicians, and G.R. Visson, officer in charge of the Eddy Point Marine Aid Centre in Nova Scotia admire one of the trophies that has been won by their "Safety Afloat" display in the background. The Eddy Point staff and employees from the Canso Canal, under Vic Kyte, Lock Superintendent, worked on the mobile display which took first place trophies this spring and summer in parades in Hawkesbury, Malgrave and Guysborough.

Le surveillant des techniciens de la section des aides, M. Gord Stevens, et l'agent responsable du centre des aides à la navigation maritime de la pointe Eddy en Nouvelle-Ecosse, M. G.R. Visson, admirent l'un des trophées décernés à leur char qu'on voit à l'arrière-plan et dont le thème était la "sécurité sur l'eau". Le char, construit par le personnel de la pointe Eddy et les employés du canal de Canso sous la direction du surintendant de l'écluse, M. Vic Kyte, a gagné les premiers prix au cours des défilés du printemps et de l'été qui ont eu lieu à Hawkesbury, Malgrave et Guysborough.



The Northern Transportation Company honoured their former engineering superintendent, Henry Christofferson, by naming one of their new tugboats after him. Mr. Christofferson first started with the company 40 years ago as part of a shipbuilding crew. The tug named in his honour took part on the historic trip that ferried 27 barges from Vancouver to Hay River for use on the Mackenzie Delta.

La Société des transports du Nord Ltée a rendu hommage à son ancien surintendant des services techniques, M. Henry Christofferson, en nommant *Henry Christofferson* l'un de ses nouveaux remorqueurs. M. Christofferson était entré au service de la Société il y a 40 ans en qualité de membre d'une équipe de construction navale. Le remorqueur nommé en son honneur a participé au voyage historique effectué de Vancouver à Hay River par les 27 chalands destinés à servir sur le delta du Mackenzie.



Dick Harley, Superintendent, Emergency Services and Requirements recently received recognition in the form of a Service Award from the National Fire Protection Association (International), with headquarters in Boston. The Award states in part " Presented to R.A. Harley in recognition of outstanding contributions to the development of standards in the specialized field of aircraft rescue and fire fighting". Dick has received considerable international recognition having served as Chairman of the International Civil Aviation Organization, Rescue and Fire Fighting Panel. Additionally, he will soon travel to Australia for the purpose of attending a meeting of The Institute of Transport, delivering a paper to a meeting of the Australian Fire Protection Association and participating in seminars arranged by the Australian Department of Civil Aviation.

Le surintendant des Services d'urgence, M. Dick Harley, a récemment reçu de la *National Fire Protection Association (International)* dont le siège social est situé à Boston, une récompense en reconnaissance de ses services. La récompense comporte la citation suivante: "A M. R.A. Harley en reconnaissance de sa remarquable participation à l'élaboration de normes applicables au domaine spécialisé du sauvetage et de la lutte contre les incendies concernant les aéronefs".

RETIREMENTS...



Lawrence Steeves has retired as Superintendent of Works and Plant Maintenance at St. John Airport in New Brunswick. A certificate of appreciation from the Prime Minister was presented to Mr. Steeves by F.L. Henderson, Superintendent of Airport Plants and Facilities for the Atlantic Region (left) and J.E. Maloney, the manager of St. John Airport.

M. Lawrence Steeves, surintendant des travaux et de l'entretien de l'outillage à l'aéroport de Saint-Jean au Nouveau-Brunswick, a pris sa retraite. Le surintendant de l'outillage et des installations d'aéroport de la région de l'Atlantique (à gauche), M. F.L. Henderson, et le directeur de l'aéroport de Saint-Jean, M. J.E. Maloney, lui ont présenté un certificat d'appréciation du Premier ministre.

The former Superintendent of Electrical Engineering of the Marine Aids to Navigation Division, Lloyd Vallee, and his wife Ivy cut a cake for them at a recent farewell party. Mr. Vallee spent 22 years in the civil service and worked for both the Air and Marine Administrations of the Ministry.

L'ex-surintendant des ingénieurs électriciens aux Aides à la navigation de la Division de la navigation, M. Lloyd Vallee et sa femme Ivy, font les honneurs d'une fête au cours d'une récente réception d'adieu. M. Vallee a passé 22 années au service de la Fonction publique et a oeuvré tant dans l'administration de l'Air que dans celle de la marine au Ministère.



...RETRAITES



R.J.D. Brown, Director, Material Management presents Lloyd H. Russett, Chief Supply Officer, with a certificate and purse on his retirement after 33 years with Ministry of Transport. On the right is Mrs. Russett.

Le Directeur de la gestion du matériel, M. R.J.D. Brown, offre un certificat et une bourse à M. Lloyd H. Russett, agent en chef des fournitures, qui prend sa retraite après 33 ans au service du ministère des Transports. Son épouse assiste à la présentation.

Robert Dudley Davis of the Churchill Marine Aeradio Station has retired after thirty-two years service. Mr. Davis has served as a Radio Operator and as an Electronics technician in Winnipeg and Churchill.

M. Robert Dudley Davis de la station radio aéromaritime de Churchill a pris sa retraite après 32 années de service. M. Davis a servi en qualité d'opérateur radio et de technicien en électronique à Winnipeg et à Churchill.

Norman Akerley has retired from the Saint John Marine Services Base after sixteen years of service with the Ministry.

M. Norman Akerley, employé des Services de la marine à la base Saint-Jean, a pris sa retraite après avoir passé seize ans au service du Ministère.

Mrs. Eileen Audcent has retired after 16 years with the Ministry. Mrs. Audcent joined Marine Services in 1957 and then became secretary to the Director, Marine Operations, when that branch was established in 1959. From then on, her cheerfulness and industry helped greatly during the period when the MOT fleet was being amalgamated into the Canadian Coast Guard. Her many friends in the Coast Guard and elsewhere will miss her but wish her a happy and rewarding retirement after her many years of service.

Mme Eileen Audcent a pris sa retraite après avoir passé 16 années au service du Ministère. Après son entrée aux Services de la marine en 1957, elle est devenue secrétaire du Directeur des opérations de la marine lors de la création de cette Direction en 1959. Dès lors, son aménité et son esprit de travail ont été grandement appréciés durant toute la période d'intégration de la flotte du ministère des Transports à la Garde côtière canadienne. Ses nombreux amis, tant dans la Garde côtière qu'ailleurs, lui souhaitent une retraite heureuse et agréable.



Transport Minister, Jean Marchand, takes a hand at the helm of icebreaker CCGS *Ernest Lapointe*, during an inspection tour of the dredging works downstream from Quebec City. The Minister visited the Dredge OXBY involved in the current $21 million program of widening and deepening the channel and later in the day inaugurated the $3 million Marine Workshops and flight operations base in Quebec City. The dredging program is currently 57 per cent complete and is scheduled for total completion at the end of next summer.

Le ministre des Transports, M. Jean Marchand, prend la commande du brise-glace n.g.c.c. *Ernest Lapointe* lors d'une tournée sur le fleuve St-Laurent pour jeter un coup d'oeil sur les travaux de dragage en aval de Québec. Ces travaux qui ont pour but d'élargir et d'approfondir le chenal maritime en aval de la Vieille Capitale, coûteront près de $21 millions. Ils devraient être terminés à la fin de l'été prochain. Après sa visite de la drague 'OXBY', le ministre a inauguré les ateliers de l'Agence maritime et la base des opérations aériennes de la région des Laurentides.

International Laurels for M.O.T. Photographer

Gordon Thomas, the Ministry's Public Affairs photographer, has received two recent honours.

A photo taken by Mr Thomas when he served as a photographer with Canadian Armed Forces was selected this year as best in the still colour category during the Sixth International Military Film Festival in Versailles, France.

A National Archives exhibition in Ottawa of Canadian military photography, entitled "Relentless Verity" is also displaying work by Mr. Thomas and by twelve other photographers, spanning the period from the Northwest Rebellion of 1885 to modern-day U.N. peacekeeping missions.

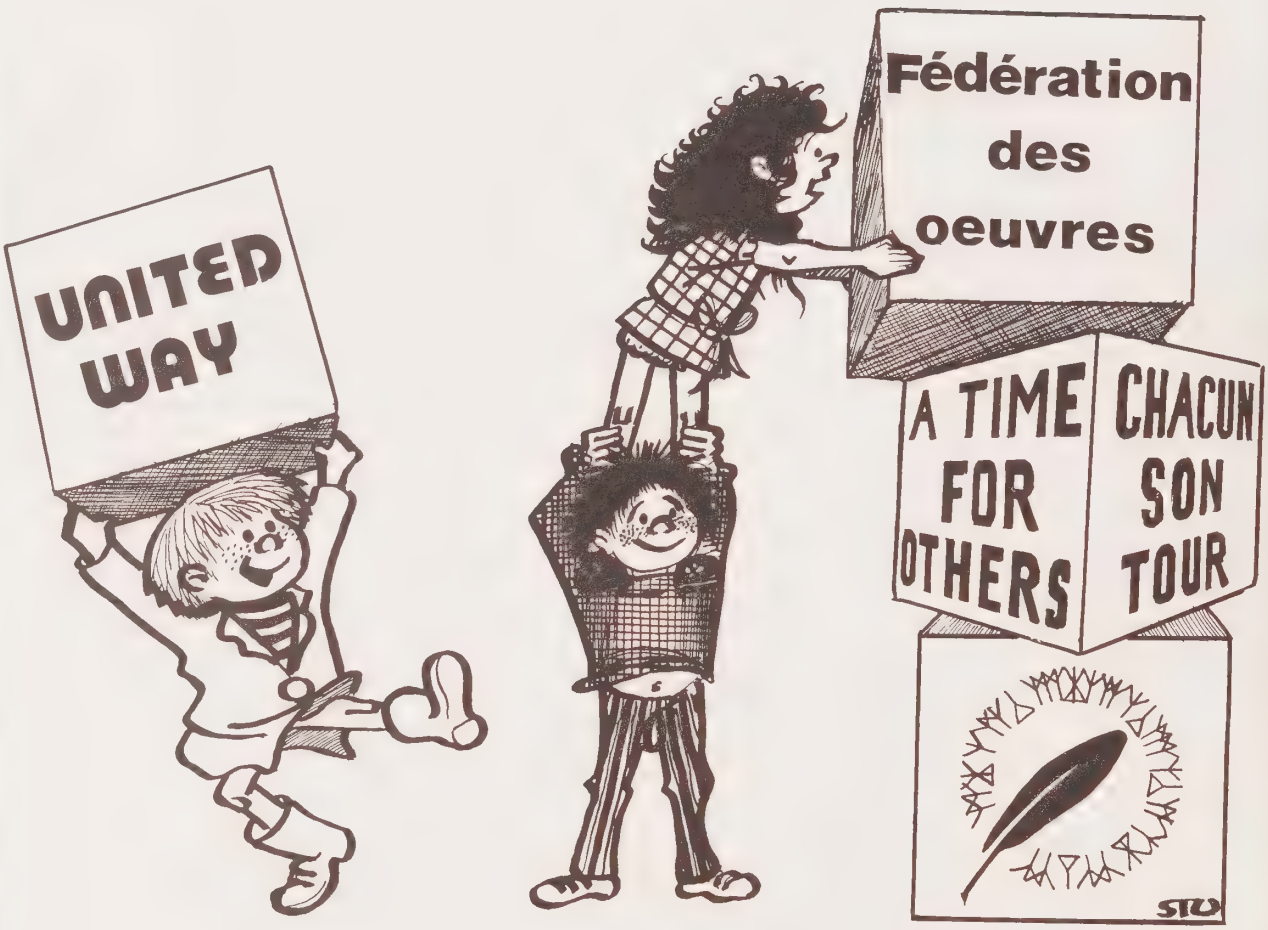











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Fédération des oeuvres
A TIME FOR OTHERS
CHACUN SON TOUR

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together
the
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way



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transport canada

Contents/Sommaire

2 Minister's Message
Message du Ministre

3 Deputy Minister's Message
Message du Sous-ministre

4 Rescue From the Deep

8 Bird's — Eye View

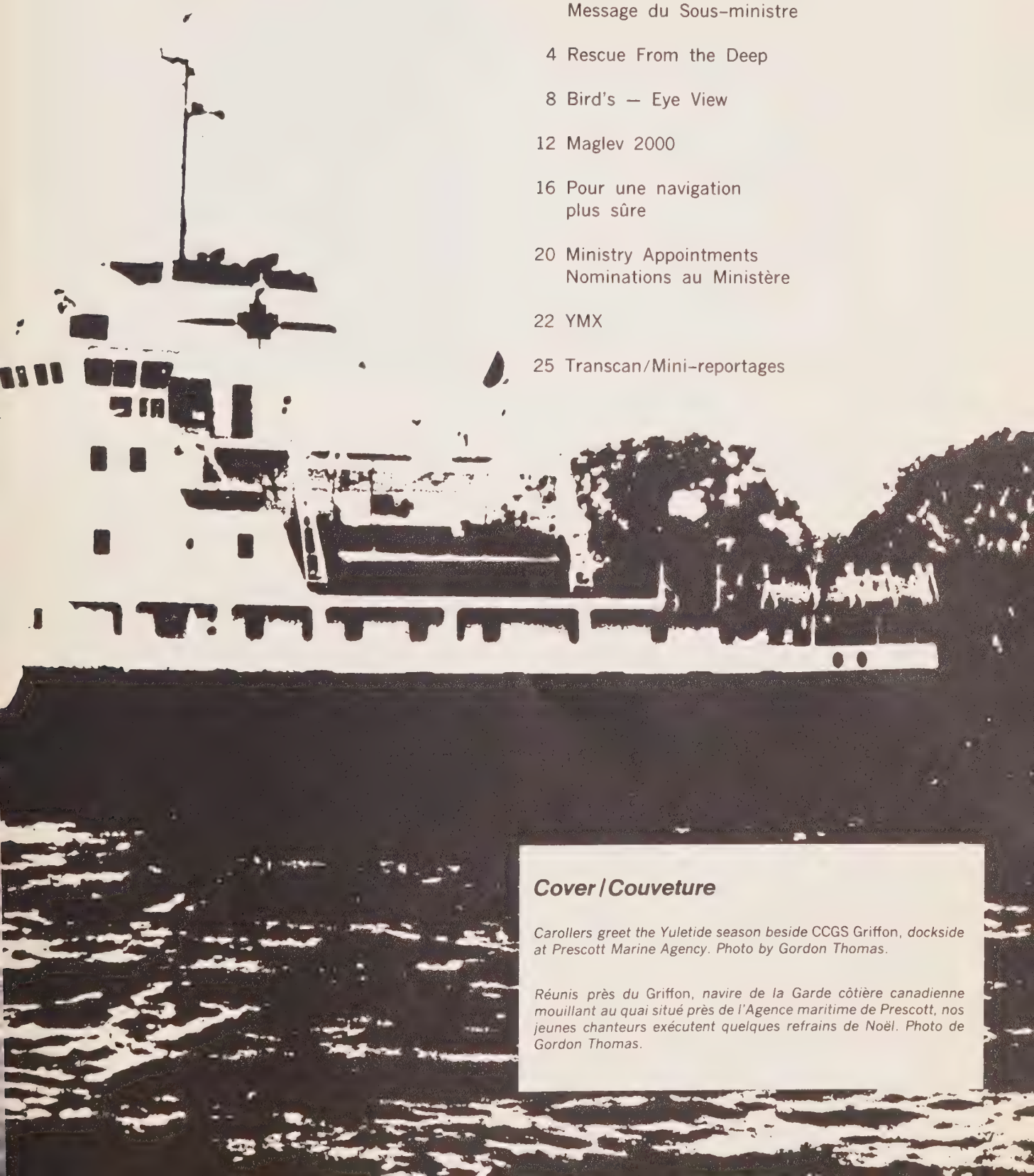
12 Maglev 2000

16 Pour une navigation
plus sûre

20 Ministry Appointments
Nominations au Ministère

22 YMX

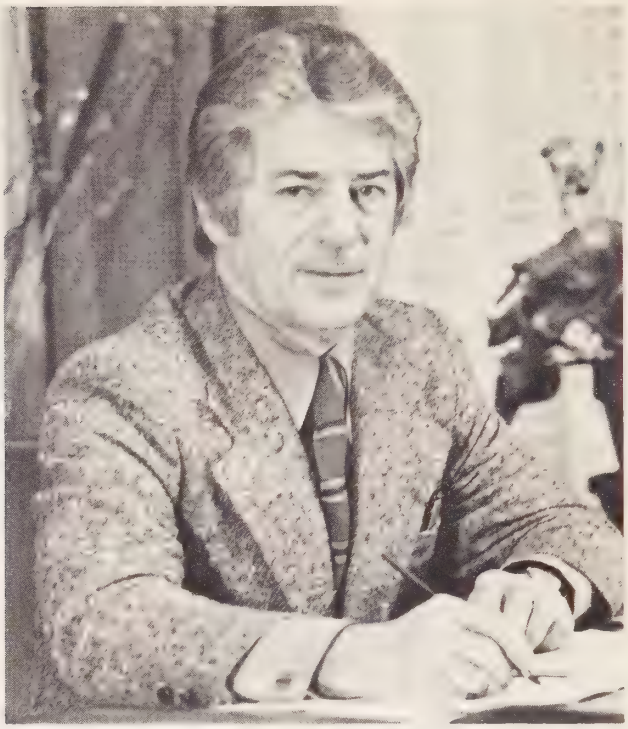
25 Transcan/Mini-reportages



Cover/Couveture

Carollers greet the Yuletide season beside CCGS Griffon, *dockside at Prescott Marine Agency. Photo by Gordon Thomas.*

Réunis près du Griffon, *navire de la Garde côtière canadienne mouillant au quai situé près de l'Agence maritime de Prescott, nos jeunes chanteurs exécutent quelques refrains de Noël. Photo de Gordon Thomas.*



The continuing high standard of service performed by Transport employees is a source of great pride and satisfaction to me.

Ours is the challenging responsibility of meeting the constantly growing transport needs of Canadians, and you are meeting that challenge. Your dedication to your work during the past year is reflected in the great progress made by the Ministry, and I want to express my sincere appreciation to all of you at this special season.

Christmas is a time for us to pause, relax and enjoy reunion with family and friends across our great country. I sincerely hope that each of you and your families have a joyful Christmas and that the New Year will be filled with happiness and success.

La qualité de votre travail est une source de joie et de fierté pour celui qui est responsable du ministère des Transports.

Nous devons, ensemble, trouver une solution aux nombreux problèmes qui nous sont posés et relever les défis du monde du transport. Le dévouement que vous manifestez dans l'exécution de votre travail explique en grande partie l'efficacité du ministère. C'est avec enthousiasme que je vous exprime ma profonde reconnaissance.

Noël est un moment de répit qui nous permet de revoir l'année écoulée et de nous juger individuellement et collectivement. Nous avons raison d'être fiers de nous et de rappeler ce qui nous unit et ce qui fut la cause de notre succès commun.



The Yuletide season gives me the opportunity to express my deep appreciation to all the members of our widespread Transport family, for the capable manner in which you have performed your tasks during the past year.

My purpose at this time is not to discuss ships, trucks, planes and trains and so on, but to commend the Transport people who make them work so well. I am proud of your dedication, reflected in your work, which accounts for the fine tradition you continue to uphold.

As Transport never rests, many of you will be working through the holiday season, keeping vital services in operation. To you and to all Ministry employees and their families I express my sincere appreciation and extend best wishes for Christmas and the year ahead.



Noël, c'est pour moi l'occasion d'exprimer toute ma reconnaissance à cette famille que constitue le ministère des Transports, une reconnaissance qui voudrait souligner la compétence et l'intelligence avec lesquelles vous avez exécuté votre travail au cours de la dernière année.

Je n'ai pas l'intention d'aborder ici les problèmes posés par les transports maritimes, aériens ou de surface, mais plutôt de m'arrêter sur la façon experte avec laquelle vous vous êtes penchés sur ces questions. Le dévouement démontré dans l'accomplissement de votre travail est pour moi une raison de fierté et une explication de l'efficacité du ministère des Transports.

Comme le monde des transports ne peut souffrir aucun arrêt, même durant cette période des réjouissances de fin d'année, plusieurs d'entre nous devront être au poste durant ces jours de festivités. A ceux-ci et à tous les autres employés du Ministère, je présente mes meilleurs voeux de joie et de bonheur en utilisant cette vieille mais excellente formule: "Joyeux Noël et Bonne et Heureuse Année".



Divers off the bow of the John Cabot *cling to the* Pisces III *as it surfaces*

RESCUE FROM THE DEEP

by Captain G.H. Warren, *CCGS John Cabot*

One of the most dramatic rescues in maritime history took place at 1:15 p.m., Saturday, September 5, when *CCGS John Cabot* pulled to the surface a small British submarine mired for three days on the ocean floor — 1,500 feet below. It was the deepest rescue of a submarine in history.

Experts at the scene stated that only the *John Cabot* with its powerful engines and two heavy-duty cable winches could have provided the stability and manoeuvrability for a United States naval robot-recovery vehicle controlled from the deck of the Canadian vessel to locate and attach a rescue cable to the submarine.

The *Pisces III* sank 160 miles southwest of Cork, Ireland, after a cable from her parent ship, the *Vickers Voyager*, snapped a hatch cover from one of the rear compartments. The compartment filled with water and the craft sank to the muddy bottom with two helpless crewmen aboard.

The story of the rescue of the *Pisces III* by the 85-man crew of the *John Cabot* and a special six-man team from the United States Naval Undersea Research and Development Centre is related below by the master of the *John Cabot*, Captain G.H. Warren, CCG.

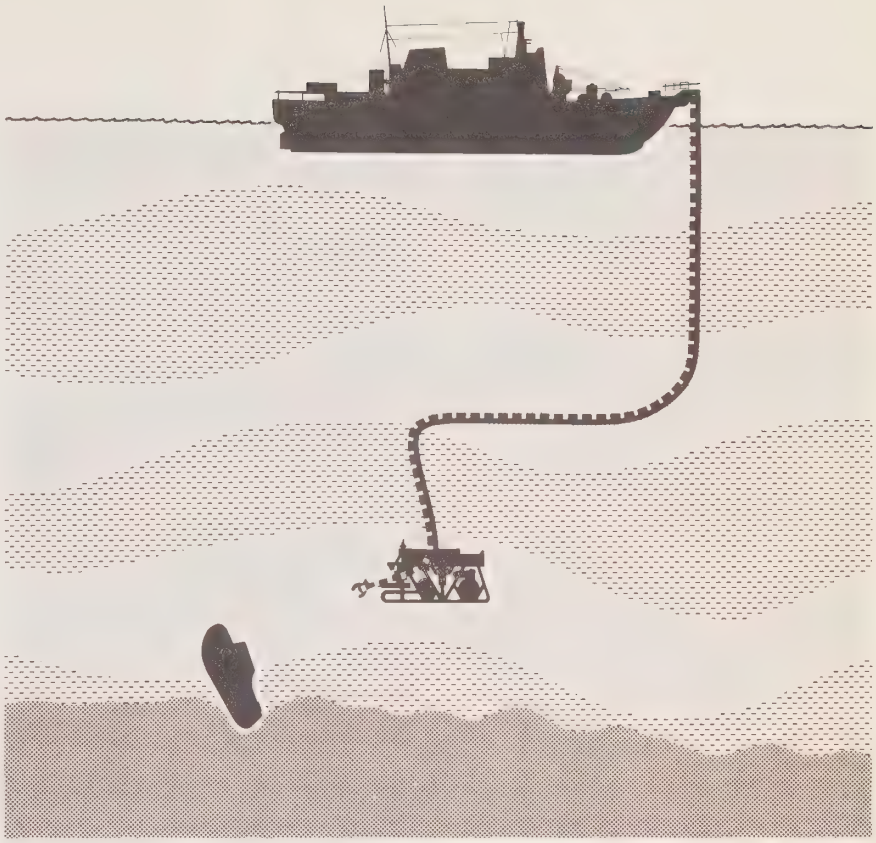
The *John Cabot* was docked in Swansea, Wales, about noon on Wednesday, September 5, when we heard about the sinking of a British miniature submarine. Our ship was serving on a long-term charter to Canadian Overseas Telecommunications Corportation, laying cable with Great Britain as our base. At 5:00 p.m. we were called and asked to assist with the rescue of the *Pisces III*, which was down about 160 miles southwest of Cork, Ireland.

Before we could leave we had to move to a dry-dock with a crane large enough to remove the sea plow and other equipment we had used in laying cable.

We were ordered to proceed to Cork to meet an airplane which was bringing the *CURV III* and its crew from San Diego, California. Cork had been chosen because it was the nearest airfield to the scene. Because it was obvious that the aircraft would not arrive on time to meet the high tide at Cork, we proceeded down the river Lee to Cobh, where the *CURV III* met us at 3:00 a.m. on Friday.

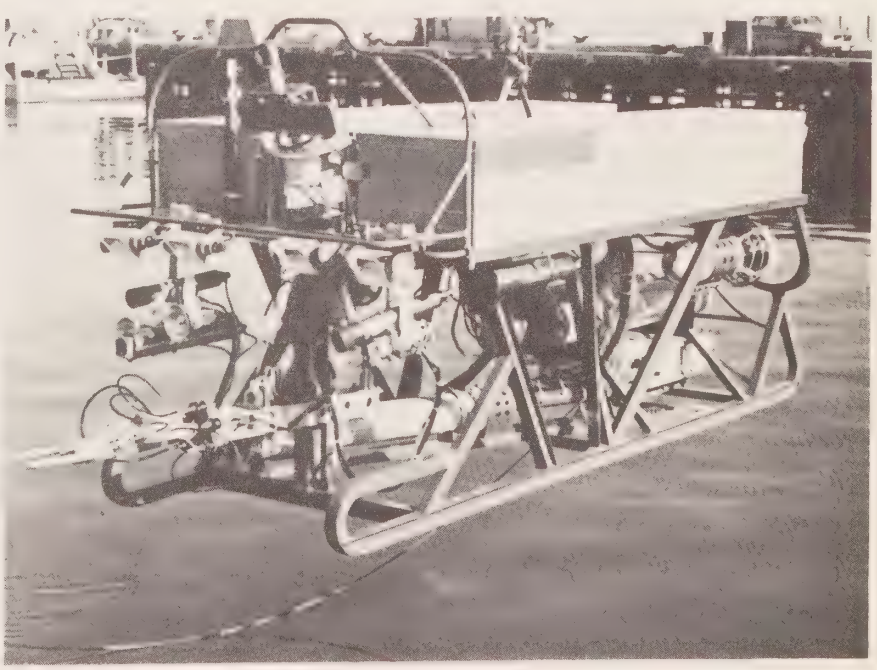
The *Cable-Controlled Underwater Recovery Vehicle III* was a specially-designed robot submarine craft that could work to depths of 7,000 feet. The crew, all professionals from the Naval Undersea Research and Development Centre, came aboard with their equipment. It consisted of a control van and a workship van — both the size of a cargo container — a generator, and the craft. By 6:45 a.m. we had all this secured and headed out to sea.

As luck would have it, shortly after leaving port we encounted heavy southwest winds at gale force. We did manage to proceed at 14 1/2 knots though the waves were as high as 14 feet.



The CURV III, *a robot submarine, controlled by her crew aboard the CCGS John Cabot carried a cable and toggle to the* Pisces III. *The toggle was inserted in a broken hatch of the sunken submarine and then the* John Cabot *pulled the sub and its two crewmen to the surface.*

The Cable-Controlled Underwater Recovery Vehicle III.



At about 4:00 p.m. we were radioed by *HMS Hecate* to ask us to send our doctor to the *Vickers Voyager,* the submarine's parent ship, which was working with two other miniature submarines searching for the *Pisces III.* Because the ship's helicopter deck was in use we had to winch our doctor to the *Hecate* in rough seas. He was later transferred to the *Voyager.*

We arrived at the rescue site about 5:30 p.m. and our first assignment was to chase away some trawlers which had been leased by the press because they were proving to be a bit of a nuisance. But they soon left. We were monitoring our radios to hear what was going on because we didn't want to bother the *Voyager* which was having a rough time of it without the engine power needed to operate cables in rough seas.

Vickers had designed a special toggle which would fit inside the open hatch of the downed vessel so it could be towed to the surface. The two miniature submarines were trying to insert the toggle in the hatch, but they could not get close enough. That night the commanders of the *CURV III* team went to the *Voyager* where it was decided to put the *John Cabot* and the *CURV* into action right away. Unfortunately the spraying of salt water onto the equipment had caused a short in the electrical equipment and this took two to three hours to repair.

In the meantime the *Voyager* decided to make another attempt with its miniature submarines and we were told to wait until morning to make an attempt.

About 8:00 a.m. we moved to a position directly above the sunken submarine, which had only a few hours of life support left, and launched the *CURV III.* The weather at this time was still terrible with the wind blowing continuously. I was in the bow myself, at the controls so I could see the lead of the lifting line and the control cable to the robot submarine, and I had to keep it perpendicular to the ship. Very shortly after it was reported that the *CURV III* was on the bottom and its sonar indicated that the sunken sub was only 150 yards away.



The author, Captain G. H. Warren, CCG.

She made her way over to the sub with a controller steering her there by means of an underwater camera which broadcast an amazingly clear picture to the control van on our deck. About ten minutes later we got the word that the robot sub had used its mechanical claw to insert the toggle in the *Pisces III* open hatch. Now the hard work began. The *Pisces III* with a back hatch filled with water would weigh over thirteen tons.

A six-inch cable, capable of lifting fifty tons, was attached to the toggle and we used our back crane to lift the submarine. Because it was sitting stern in the mud we had to ease the submarine through an 180 degree spin before lifting. The *CURV III* pulled away ensuring there were no fouled cables and then made its way independently to the surface.

Our plan was to bring the submarine to within about fifty feet of the surface so that it would be on an even keel but we found that, because the submarine itself was almost buoyant underneath the surface, the lifting and falling of our



Their 76-hour ordeal over, Roger Mallinson and Roger Chapman once on land celebrated their rescue with champagne.

Canadian Coast Guard Ship John Cabot.



ship in the rough seas was having a jerking effect on the submarine. The divers just couldn't get near the submarine. We then decided to bring the sub to the surface right up under the bow sheaves and then secure another cable from the starboard cable engine to keep it on an even keel just above the surface of the water.

Divers were nearby with rubber rafts and they blew the hatch and literally dragged the men from the sub into the rafts and then carried them back to the parent ship.

I was only about ten to twelve feet away when they first appeared out of the submarine. A cheer went up from the crew of the *John Cabot* and you could see a smile cross the rescued men's faces. One of them, Roger Chapman, later sent me and the crew a letter of thanks.

Now that the two men were safe, the problem was how to save the *Pisces III* which was worth a million dollars. We solved that problem by putting balloons in the sub and then inflating them inside the compartments. The sub was then buoyant enough to be towed over to the *Voyager.*

Then we headed back to Cork to drop off the *CURV III* and the Americans. There was a real turn-out of people there to greet us when we arrived on Sunday.

We then made our way back to pick up our equipment and to prepare for our next assignment.



Air Traffic Controllers and ATC Assistants (CR) at the Toronto International Airport control tower.

A BIRDS-EYE VIEW

The need for air traffic control began when Orville Wright turned to his brother Wilbur and said, "Let's build another one".

Aviation has come a long way since the days of Kitty Hawk and the Silver Dart. And yet how many of us have a basic understanding of what is happening as we fly to our various destinations?

For most of us, whenever we board the aircraft, psychologically we believe "we've arrived". Our only concern is to avoid the middle seat, and then decide whether to eat the airline special for the day. The flight to our destination is almost a "suspended moment". Our hassle is getting to the airport and then, once we've reached our final destination, getting to our appointment or home.

Yet those "suspended moments" in our comfortable perch, often at 27,000 plus feet, are moments of intense activity for the Ministry of Transport air traffic control system to ensure that your flight is safe, fast and efficiently assisted to your destination.

What is air traffic control all about? In raw terms — to prevent collisions. In official terms — to provide a safe and economic air traffic flow through the effective utilization of air space.

Technological change creates new industries and services at a rapid rate. For instance, in 1939 the federal government established its first control tower at St. Hubert, Quebec; today there are over 2,000 controllers working in various air traffic control facilities across Canada.

Admittedly there was a form of control prior to this period. At one time signalmen were used at the side of runways with little flags to wave aircraft on or

off. A few years later, these signalmen were put into raised towers on hangars or buildings. Sirens, flashlights and coloured light guns replaced the red and green flags. However, with the use of two-way radios the Federal Government's air traffic control system was born.

As far back as 1919, the International Commission for Air Navigation had sombrely warned, "Every aircraft in cloud, fog, mist, or other conditions of bad visibility shall proceed with caution, having careful regard to existing circumstances".

By 1941, the first enroute control centre was established at Toronto. As traffic increased, air traffic control became more complex. Because of the mixed speeds of aircraft, radar was introduced to provide a terminal control service within twenty miles of major airports.

Today the Canadian Air Traffic Control System provides complete national coverage — from coast to coast, including the point of no return halfway across the North Atlantic.

A Toronto Centre controller studies her radar screen.



The Air Traffic Controller

On a flight from Ottawa to Toronto, seventeen air traffic controllers are responsible, at various stages, to guarantee that your flight is another routine experience in the Canadian air transportation system. As passengers you have as big a stake in the skills, competence and experience of the controller as you do in that of the pilot and his crew. The Ministry of Transport air traffic controller is the central link in a vast radar/communications network.

The controller is a decision maker. Typical decisions include issuing climb and descent clearances, assigning altitudes, headings, speed restrictions and arrival and departure clearances.

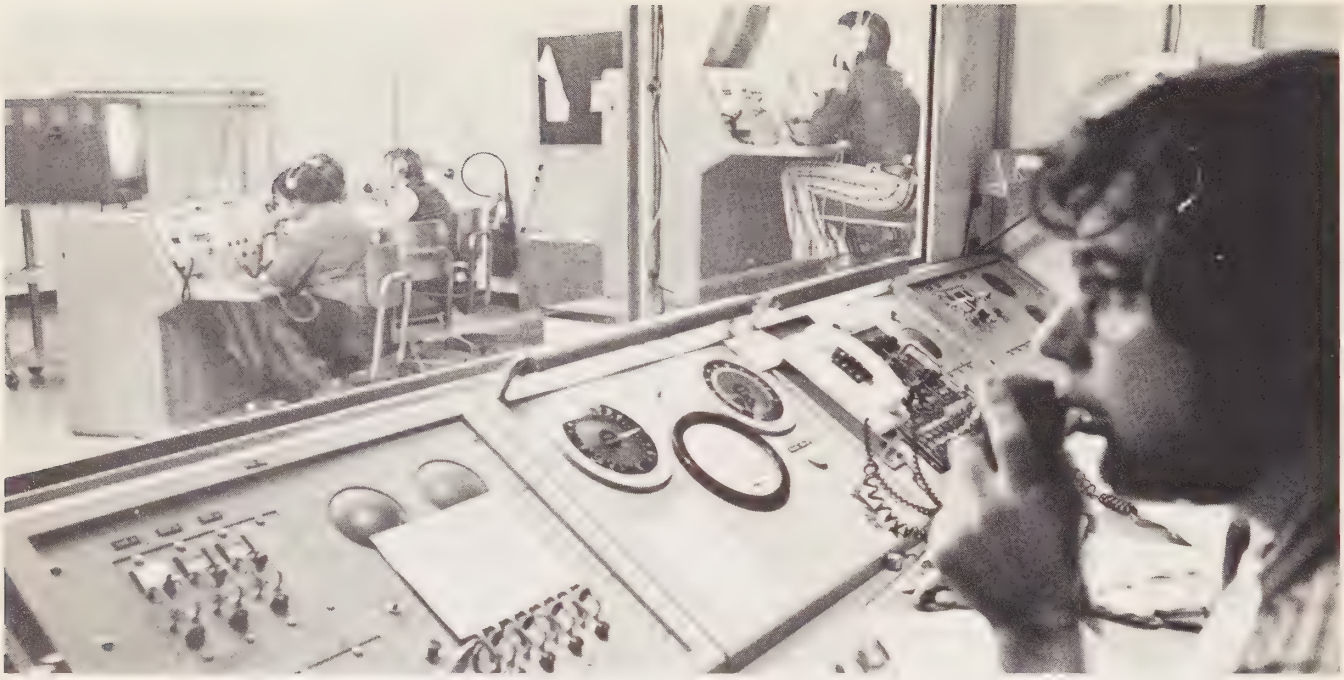
The Ministry of Transport ensures that controllers maintain high standards of competency and medical condition. All Canadian controllers are required to pass a stringent annual medical examination from Ministry of Transport-approved doctors, and must complete five days of refresher training each year. Freshmen-in-training are provided with an intensive training period that utilizes the latest simulation and teaching techniques. This training is conducted at the Air Services Training School in Ottawa and at regional schools. A controller receives approximately two years of Ministry training prior to licensing as an instrument controller.

A typical training program would see recruits assigned to an air traffic control facility for familiarization for several months. This introduces them to the job environment and the complex and highly demanding work required. Next they are assigned to the Air Services Training School where they study meteorology, navigation, radar theory and procedures. Approximately half of their training time is spent in a simulator applying their learning. After months of training at the Air Services Training School they proceed to an airport tower or an Area Control Centre for on-the-job training under close supervision.

The Air Traffic Control Assistant

Supporting the controller is the air traffic control assistant, who operates equipment and handles clerical duties in control towers and control centres in the air traffic control system.

An assistant in a control tower is responsible for such functions as receiving, recording and relaying Instrument Flight Rule (IFR) clearances and all data required for both IFR and Visual Flight Rule (VFR)



Student controllers test their knowledge and skills on the simulators at the Air Services Training School.



Electronic technicians keep the ATC system equipment in the best of condition.

flights and flight plans; maintaining daily records and summaries; communicating with airport and other agencies in regard to tower equipment and providing advice and information to pilots and the general public.

In Area Control Centres assistants are employed as Flight Data and Air Movement Information Service personnel as Console Operators and some are Shift Supervisors. They maintain the data, equipment and communications for the seven Area Control Centres across the country.

The Electronic Technician

Ministry of Transport electronic technicians are responsible for the research, planning, engineering, installation and maintenance of the electronic facilities of the air control system. Other technicians perform similar functions for the equipment of the Marine Administration.

More sophisticated equipment for all-weather operation of air traffic is being introduced every day and the electronic technicians are helping develop modern radar-supported air traffic control and communications sytems.

In June Transport Minister Jean Marchand announced the formation of a special implementation team to follow up the recommendations of a major occupational study of the electronic technician group. The study contained recommendations pertaining to management and supervision, technical training, an integrated career development program and the general working environment of the electronic technician group.

The Ministry maintains an Electronic Systems Training Centre at Carp, Ontario, equipped with most major electronic systems and staffed by 20 electronic specialists. Courses which average a four-week duration are run continuously, specializing in communications, navigational aids, radar and digital computer systems.

These experts are responsible for the development and maintenance of the most-up-to-date in equipment that makes the Canadian air traffic control system one of the world's finest.

JETS

A $74 million three-phase Joint Enroute Terminal Systems program to significantly upgrade air traffic control radar surveillance systems in southern Canada was approved last October. The aim of the program is to use computers to further process radar and other information, allowing air traffic controllers more time for the decision-making process. The JETS program will expand, computerize and eventually automate air surveillance operations for Canada's air traffic controllers. The system is intended to enhance the safety and efficiency of air traffic control and provide a means to cope with increased air traffic, particularly around such large centres as Toronto and Montreal.

When completed, the new system will increase usable radar coverage, improve the quality of radar presentation and the availability of information, reduce overall controller reaction time and the possibility of wrong decisions, increase controller productivity, improve controller-to-pilot communications and provide more effective airspace utilization across Canada.

Under the first phase of the JETS program, a greatly increased number of civilian and military radar installations will be incorporated into the new air traffic control system to serve Canada's seven major air traffic control centres at Gander, Moncton, Montreal, Toronto, Winnipeg, Edmonton and Vancouver.

The first phase will also incorporate use of computers to process radar data, flight plan information and coded information received automatically from aircraft to provide position identification and altitude. Smaller computers will then select and display appropriate vital information for the air traffic controllers, such as the position, flight number, altitude, ground speed and special condition symbols indicating an emergency condition or radio failure.

The second and third phases of JETS would involve additional refinements of the automation of information processing and display.

The first phase of the program is scheduled to be completed in January 1978. Phases two and three will follow with completion around the mid-1980's.

Subsequent phases of JETS will increase the sophistication of computer assistance. For example, the computers eventually will automatically calculate possible collision courses between aircraft and flash a warning to the controller, determine the future position of planes, and calculate, in terminal areas such as at Montreal and Toronto, the best order and spacing for planes to land and take off.

The intent of the Ministry of Transport is to continue to provide the travelling air public with the safest, most expeditious and economical air traffic system available in the world.



A greyish, bullet-like blur streaks across the countryside almost faster than the naked eye can follow. In the year 2000 the passing of an electro-magnetic levitation vehicle on one of its regular, daily, two-hour runs between Toronto and Montreal attracts little attention.

A new transportation system is now on the horizon — the first in the history of man in which electrical and electronics engineering seem destined to play the dominant role.

When the need for high-speed ground transportation was recognized some ten years ago, a worldwide effort evolved to find suitable methods for reliable suspension and propulsion.

The early efforts concentrated on improvements in conventional rail technology, with attempts to adopt air-cushion suspension for operation over a guideway.

The magnetic system was recognized as a theoretical possibility but was not given the assiduous attention it deserved.

Although some experts today feel it has greater universal credibility than air-cushion suspension, it was only about six years ago that modern magnetic levitation was born.

And now the prospect of this kind of rapid transit being operational at the turn of the century or earlier is excellent.

Research into an electro-magnetic levitation (MAGLEV) vehicle capable of a maximum speed of 300 mph is now taking place at the Canadian Institute for Guided Ground Transport at Queen's University, Kingston, Ontario, under the sponsorship of the Ministry of Transport and the National Research Council.

Such a prototype vehicle, making use of superconducting magnets for suspension and propulsion, could form the basis of high-speed ground transportation systems which could allow a total door-to-door travel time of two hours between Montreal and Toronto, with an intermediate stop in Ottawa. The present equivalent door-to-door air travel time is three-and-one-half hours.

Similar research projects, with systems operations scheduled for introduction in the mid-1980's, are under way in Japan, West Germany, France and the United States.

The impetus for this revolutionary approach to rapid transit has been provided as much by urban neglect and insufferable congestion as by man's lofty idealism and enterprising spirit.

Roads have apparently lost their former popularity and budgets have suffered accordingly. In 1971 Toronto's $237 million Spadina Expressway was cancelled and a similar fate befell Vancouver's $200 million Brockton Point Crossing last year. These are but two examples of the re-examination that has characterized recent urban transportation planning.

A new era for inter-city travellers and peri-urban commuters is being heralded with the dramatic breakthrough of MAGLEV vehicles as a means of rapid transit that will not only drastically decrease intra-urban and inter-city travelling time but will also help solve the energy crisis and air pollution and congestion problems that face us.

The rationale for MAGLEV vehicles is quite simple. Conventional or advanced duorail techniques cannot be extended to speeds in excess of 200 mph. Non-contact suspension and propulsion systems are required. Magnetic levitation (MAGLEV) vehicles are therefore being developed, while linear electric motors, probably the synchronous variety, are proposed for propulsion.

The synchronous motor is a well developed one and is used in Canadian industry. It consists of a stationary winding to which current is supplied. The movable part of the motor consists of current-carrying windings and the speed of the motor is

MAGLEV 2000

◁ *Artist's conception of an urban transport system for the near future. Courtesy of Krauss-Maffei, Germany.*

determined by the frequency of the AC voltage supplied and the design of the windings of the motor.

The intersection between the magnetic fields of the stator and rotor windings produces a magnetic force which turns the motor up to its running or synchronous speed.

Principles

When a magnet moves in the vicinity of an electrical conductor, eddy currents which repel the magnet are induced in the conductor. If high-strength superconducting magnets are mounted beneath a vehicle moving over a guideway with aluminum conductors on the surface, the repulsive forces can be used to support the weight of the vehicle. Magnetic levitation provides a non-contact syspension system. The levitation force, however, depends on motion. A stationary or slow-moving vehicle requires an auxiliary suspension system such as wheels.

Most of the concepts of MAGLEV are at least half a century old. Modern technology now makes them economically feasible, the most significant factor being the recent development of large reliable superconducting magnets for engineering applications.

Superconducting magnetics are electromagnetic coils of special material, cooled to very low temperatures at which the electrical resistance vanishes. High strength magnetic fields can then be generated without the prohibitive amounts of electrical power which conventional electromagnets would require since permanent magnets cannot produce sufficiently high fields for large suspension heights. Superconducting magnets are maintained at a low temperature by operating them in liquid helium at a few degrees above absolute zero.

Superconducting magnets offer a great advantage over conventional electro-magnets for use in high-speed MAGLEV vehicles because they can generate very much larger lift forces for the same amount of input power so that levitation heights of about nine inches can be considered; at such heights the vehicle could ride above ice, snow and minor guideway irregularities expected to be encountered under Canadian climatic conditions.

Propulsion

Propulsion of the vehicle would be achieved by a linear synchronous motor using the superconducting magnets on the vehicle and energized loops in the guideway. The linear synchronous motor provides efficient electrical propulsion at large heights of levitation and lends itself well to automatic control.

Since the systems will be controlled through the guideway rather than from the vehicle, there is no need for a control-communication link to the vehicle. The MAGLEV pilot or controller, either automatic or human, would therefore be located on the ground rather than in the vehicle cab.

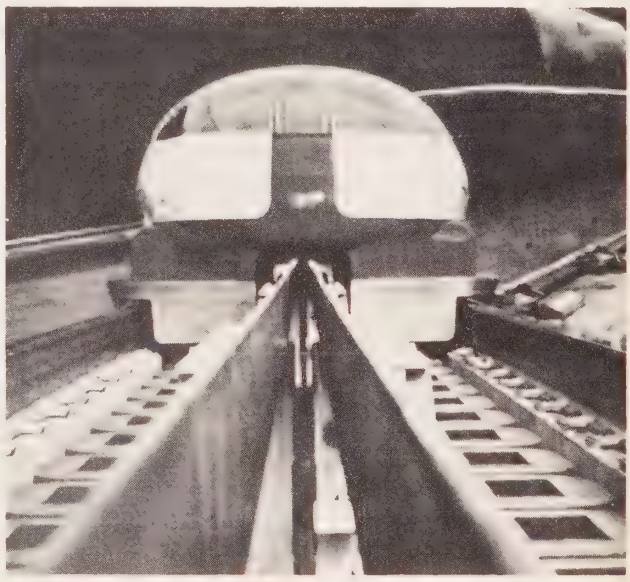
Any new high speed guided ground transport system is likely to require a $1,000,000,000 capital investment and an implementation time-scale of several years. Early research and development leading to engineering and economic optimization is therefore essential. Since the demand for high-speed guided ground transport appears to be growing rapidly, MAGLEV development has probably made a late start. However, the present rapid progress is very encouraging, and it appears that MAGLEV may avoid the major problems of small clearance and high-speed wayside power collection that other systems still have to overcome.

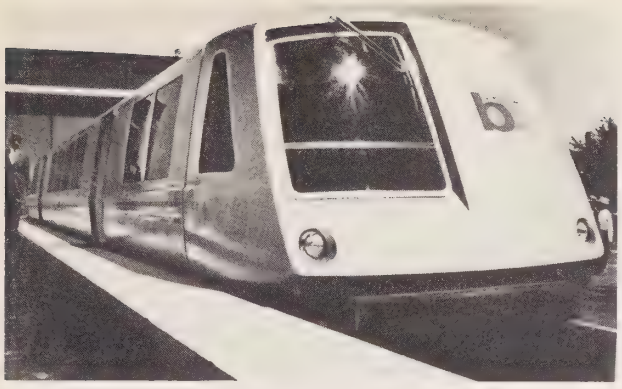
Current Development

The largest development effort at present is in Japan, where current expenditures are probably in excess of $20,000,000 annually. Part of the German effort is unusual since much of it is devoted to systems using attractive forces between electromagnets and iron guideways. The inherent instability of this system has been successfully overcome by using automatic feedback control.

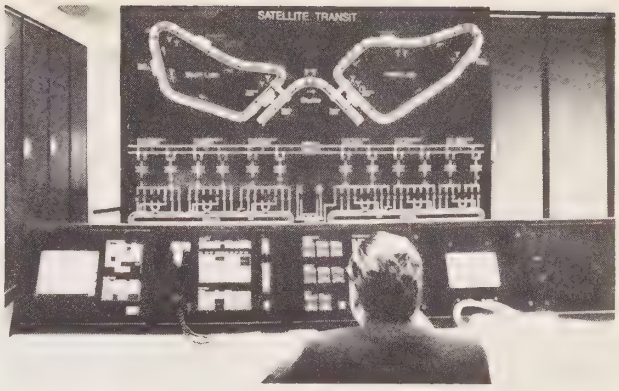
There is at present a wide variety of configurations proposed for MAGLEV. The early stage of development and differing emphasis, partly due to differing local and economic conditions on such aspects as magnetic drag, power consumption, guideway

An experimental Japanese magnetic levitation vehicle.





The computerized BART system currently in use in the San Francisco area.



Computer-supervised transit cars carry air travellers from downtown to the Sea-Tac International Airport near Seattle on a new automated transit system. An operator monitors the system's operation from a central control room.

costs, and traffic densities, probably account for the present diversity. It is likely that a variety of systems will persist, optimized to different conditions.

The Canadian corridor (Montreal — Ottawa — Toronto) has a population density approximately 15 percent of that along the high-density corridors in Japan and in northeast U.S.A. Implementation of a MAGLEV system in Canada is therefore expected to be later than elsewhere, probably in the late 1980's. This is perhaps fortunate since MAGLEV development elsewhere is behind the demand. More time for research and development should result in better economic optimization and substantial cost savings.

As a result of a Memorandum of Understanding on transportation research-sharing between the United States and Canada, regular meetings to coordinate programs have been held with the U.S. Department of Transportation and their contractors, Ford Research Laboratories and Stanford Research Institute.

The Canadian program is concerned with the cryogenic (low temperature) and engineering aspects of advanced lightweight, super-conducting magnets and with linear synchronous motor propulsion. The Canadian test facility, now under construction, was conceived to be complementary to those in the United States. Ford has tested small-scale super-conducting magnets acting against a high-speed, rotating, aluminum flywheel, while the Stanford Research Institute has tested super-conducting magnets carried on a wheeled trolley over a 500-foot linear guideway.

It is noteworthy that the Province of Ontario recently awarded a $16 million contract to Krauss-Maffei AG of Munich to build an experimental 2.5 mile test track on the Canadian National Exhibition Grounds in Toronto. MAGLEV cars could be in operation by the summer of 1975.

This constitutes the prelude to full-route, intermediate-capacity transit systems for Toronto, Hamilton and Ottawa and will require an expenditure of about $1.3 billion over the next ten years.

Krauss-Maffei is developing two transportation systems: (1) the "Transurban", designed primarily for installation in and about cities and (2), the "Transrapid", designed as a high-speed, inter-city transportation system, with speeds up to 325 miles per hour. The "Transurban" (effectively, an articulated conveyor belt) is still in the paper-design stage. Both systems are quite sophisticated, using magnetic levitation and linear induction motors for propulsion. The "Transrapid" is in the experimental stage, undergoing tests on a 0.6 mile track which has allowed speeds of up to 100 miles per hour. A variant of the "Transrapid" vehicle, with a capability of the order of seventy miles per hour, is the basis of the Krauss-Maffei submission to the Government of Ontario.

By working in concert with other countries on some projects and keeping abreast of independent research developments elsewhere, Canada ensures that it avoids duplication of work being done in other jurisdictions and continues to maintain a competitive posture nationally and internationally.

And, most important, the advance of rapid transit along magnetic levitation lines will afford Canadians speedy, efficient and noise-and exhaust-pollution-free transport which will greatly enhance the quality and length of life of all concerned.

pour une navigation plus sûre.....

Deux antennes de radar — celle que nous voyons ici est située à Eddy Point — permettent d'assurer une surveillance complète de la circulation des navires dans cette zone des Maritimes



L'apparition des pétroliers géants dans les eaux canadiennes, prévue par les responsables de la sécurité maritime et de la lutte contre la pollution, a amené ces derniers à adopter certaines mesures préventives.

Selon eux, il était devenu indispensable pour assurer la sécurité de la navigation et éviter la pollution par les hydrocarbures, que le système canadien d'aides à la navigation soit complet et que les mouvements des bateaux soient surveillés par radar.

La raffinerie de pétrole de Point Tupper dans le détroit de Canso (N.-E.), a été le premier port canadien à recevoir des navires de 350 000 tonnes, et c'est dans cette région que le ministère des Transports a aménagé à leur intention un système intégré d'aides à la navigation.

Ce système a été conçu pour faciliter le passage progressif des aides en haute mer aux aides au large, puis aux aides locales et portuaires.

Les navires qui se dirigent vers la baie de Chédabouctou passent en général d'une aide électronique à la navigation en haute mer à un système de navigation DECCA alors qu'ils sont encore bien loin des côtes de la Nouvelle-Ecosse. Le système DECCA les mène directement à la bouée de chenal située à l'entrée de la baie de Chédabouctou. En cas de panne de son récepteur DECCA, un navire peut maintenir son cap sur la bouée à l'aide de son radiogoniomètre.

La bouée de mi-chenal est munie d'un répondeur radar qui apparaît sur l'écran radar des navires sous forme de signal codé. Ce répondeur a une portée de 8 à 12 milles.

Une ligne simple de bouées balise la route dans la partie extérieure de la baie et sert aussi à séparer le

trafic entrant du trafic sortant. Une station de pilotage se trouve près de l'extrémité intérieure de cette ligne de bouées.

A partir d'un point situé à environ trois milles de la station de pilotage en direction de la raffinerie, le chenal est balisé des deux côtés et toutes les routes sont indiquées par des feux de direction placés à chaque extrémité de celles-ci. Toutes les bouées sont munies de réflecteurs radar.

Cette zone est entièrement surveillée par radar. Ce résultat a été atteint grâce à l'emplacement judicieux de deux antennes; la zone intérieure est surveillée par une antenne située à environ six milles à l'ouest de la ville de Canso. Ce dernier poste n'étant pas habité, l'image obtenue par radar est transmise au centre d'information de Eddy Point par faisceau hertzien. Parvenue au centre d'information, qui constitue le coeur du système, l'image radar apparaît sur deux écrans de télévision de 21 pouces à haut pouvoir de résolution. Un équipement spécial sert à enregistrer à mesure l'image radar sur bande vidéo. Cette bande vidéo peut être repassée sur les consoles de visualisation ou conservée pour référence.

Le radar est muni de points électroniques disposés de manière à indiquer la ligne médiane du chenal. Ces points sont également disposés en paires de façon à indiquer la position de chacune des bouées, ce qui permet d'en vérifier l'emplacement de façon rapide et précise.

L'agent d'information du trafic à Eddy Point est en communication directe par radiotéléphonie à très haute fréquence avec l'équipe de passerelle des navires situés dans la zone de Canso, et parfois aussi par radiotéléphonie à moyenne fréquence. La station radio côtière se trouve dans le centre d'information du trafic et assure des communications à longue distance supplémentaires.

Le ministère des Transports s'emploie activement à l'heure actuelle à étudier les conditions requises pour établir un système complet et généralisé de contrôle du trafic maritime dans les eaux canadiennes. L'expérience du système détroit de Canso-Chédabouctou contribuera grandement à mettre au point et à implanter de nouveaux systèmes du même genre dans tous les ports et sur les voies navigables d'importance du Canada.

Grâce à un signal codé qui apparait sur deux écrans de télévision de 21 pouces de hauteur, les employés suivent la marche des navires dans la baie de Chédabouctou et le détroit de Canso.



T'was the night before Christmas, and
not a creatur



through the land,
as stirring except.....



and from all A Good Holiday

ministry appointments

Senior appointments in the Ministry of Transport were announced recently.

D'importantes nominations ont récemment été annoncées au ministère des Transports.



Roy Illing has been appointed Administrator of the Canadian Marine Transportation Administration. Mr. Illing, formerly Administrator of the Canadian Surface Transportation Administration, succeeds Dr. Pierre Camu.

M. Roy Illing a été nommé Administrateur des transports maritimes. Antérieurement Administrateur des transports de surface, M. Illing succède à M. Pierre Camu.



Paul Normandeau has been appointed President of the St. Lawrence Seaway Authority. Mr. Normandeau was formerly Assistant Deputy Minister, Department of Regional Economic Expansion.

M. Paul Normandeau a été nommé président de l'Administration de la Voie maritime du Saint- Laurent. Il était auparavant Sous-ministre adjoint de l'Expansion économique régionale.

nominations au ministère



Michael Butler has been appointed Senior Ministry Executive, Policy Planning and Major Projects. Mr. Butler, formerly Assistant Deputy Minister of Planning Management and Evaluation, Department of Energy, Mines and Resources, succeeds Charles Halton.

M. Michael Butler a été nommé Conseiller exécutif du Ministère, Politique, Planification et Projets importants. M. Butler, auparavant sous-ministre adjoint (planification et évaluation) au ministère de l'Energie, des Mines et des Ressources, succède à M. Charles Halton.



William O'Neil has been appointed to the newly created position of Deputy Administrator, Canadian Marine Transportation Administration. Mr. O'Neil will retain his responsibility in the area of Marine Services which he has held the last two years.

M. William O'Neil a été nommé au nouveau poste d'Administrateur adjoint des transports maritimes. M. O'Neil continuera à remplir ses fonctions dans le domaine des Services de la Marine, comme il l'a fait depuis deux ans.

YMX

by C.A. Vallée
Regional Public Affairs Officer
Quebec Region

YMX seems an appropriate name for a giant jigsaw. And to the uninitiated, projects such as the construction of the New Montreal International Airport at Mirabel must resemble a giant puzzle, with the pieces fitting together ever so methodically.

In international aviation circles, YMX is the code by which the new airport is already known. By 1975 the project will become a reality to the millions of passengers who will take advantage of the airport's people-oriented design.

A year ago, a view from the air provided vague tracings of runways, spine roads and the beginnings of a terminal building. By December, the 1,140-foot-long terminal will be completely glassed in with 700 men working inside at high gear.

Outside, the work will slow down because of the winter cold, but the concrete work for the first two main runways and taxi-strips is well under way.

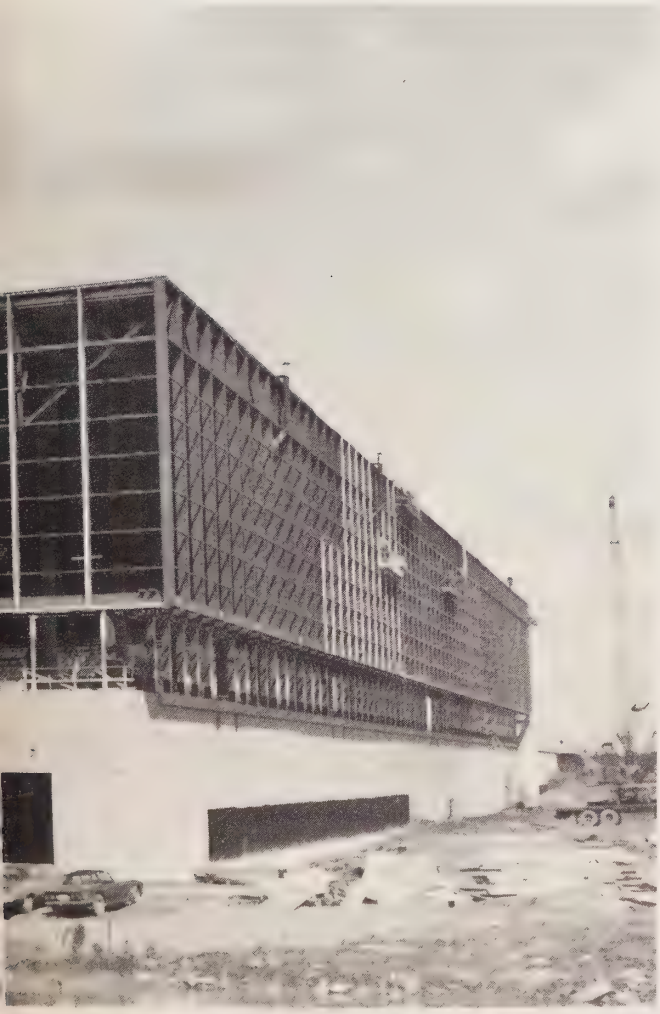


When the airport opens in 1975, it will be a most impressive sight. Approaching it from either the eastern or western entrance, the predominant feature will be the control tower, a concrete tripod jutting into the air some 215 feet. The height is necessary, so that the controller can sight the ends of the two main runways which are separated by approximately four miles. Near the tower and adapting itself to the environment will be a terminal building in keeping with the landscape. From ramp to airplane the passenger will normally walk only 300 feet, the rest of the distance being taken care of by the passenger transfer vehicle for international flights, arrivals and departures.

Looking towards the airside of the terminal building, an aeroquay with four nose-in and two off-gate positions, separates the terminal from the service buildings on the apron where there are 18 places for parking and servicing aircraft. Fourteen passenger transfer vehicles (mobile lounges) will ensure a shuttle service between the terminal and aircraft without the air traveller being exposed to the elements.

Adjacent to the terminal building and its three-level parking structure for 2,500 vehicles will be an administrative building, a 250-room hotel called Chateau Mirabel, and a cargo area. These facilities will form an integral part of the first operational phase of the airport which will include two major runways and associated facilities for fuelling and maintenance.

Master planners have foreseen the growth of the New Montreal International Airport and its surrounding area. The forecast plan for the huge tract of land is complex and reaches well into the 21st century. For the foreseeable future, the planners have divided the progress of the New Montreal International Airport into three phases: the first phase, on opening day, will see a transfer of some





Workmen installing glass on the west wall of the terminal building.

The terminal viewed from the west.



In international aviation circles, it will be known as YMX. But to most people it will be Mirabel. The east-west runway of what will be the world's largest international airport is shown here.

3.7 million passengers from Dorval's international section to the new airport. This will effectively leave the Dorval airport with transborder and domestic traffic totalling approximately 5.2 million passengers per year. The first phase of Mirabel construction will take care of the initial transfer of traffic with room for growth for an additional 3 million passengers.

Planners expect that by 1980 this ceiling will have been reached and phase two of the new airport's operation will go into effect. In 1980, transborder traffic will shift to the new airport and bring with it some 4 million passengers annually. This second transfer will likely require construction of one additional runway and another terminal building.

The 1980 transfer of traffic will leave Dorval with domestic services only and a volume of some 3.2 million passengers, the total handled in the early 1960's. Along with those shifts in international and transborder traffic will go a number of domestic connecting flights.

The master plan for the large tract of land (138 square miles) calls for an ultimate phase of operations at some point in the 21st century. The airport will then consist of six runways and six terminal buildings as well as a STOLport and all associated facilities for processing both passengers and cargo. The airport will have an ultimate capacity of 60 million passengers a year.

When phase one of the mammoth project is completed, the Federal Government will have injected some $400 million into the area and will have provided some 4,000 jobs over the four-year construction period. By opening day it is estimated that some four to five thousand personnel will be permanently employed on the site.

The New Montreal International Airport has already attracted world-wide attention because of the unique planning and development of what will be the world's largest airport. It is also a trendsetter in providing for long-term development of the airport zone and surrounding land.

TRANSCAN



MINI-REPORTAGES

CCGS *Verendrye* off Parliament Hill, Ottawa.

Le ngcc Vérendrye au pied de la Colline parlementaire



The boys who appeared on the Christmas cover of TRANSPORT CANADA enjoyed a special tour of the CCGS Griffon. *Captain Doug Creaser shows Chris Duffield, Allan Joudain and David Tighe the ship's radar equipment while Second Officer Jim Calvesbert demonstrates the ship's controls to Jeff Morris, Brent Dalgleish and Greg McAllister. The boys attend Central-Churchill Public School in Prescott, Ontario.*

Les enfants qui apparaissent sur la page couverture du numéro de Noël de TRANSPORT CANADA ont pu profiter d'une tournée spéciale à bord n.g.c.c. Griffon. *Sur notre photo, le Capitaine Doug Creaser montre l'appareil radar à Chris Duffield, Allan Joudain et David Tighe pendant que le second Jim Calvesbert parle des commandes du navire à Jeff Morris, Brent Dalgleish et Greg McAllister. Les garçons vont à l'école Central Churchill de Prescott (Ontario).*



MOT employees receive invention royalties

Two employees from the Ministry's Telecommunications and Electronics Branch have achieved a notable "first" by receiving royalties from a licensed invention with patent pending.

Martin Stanley-Jones and Don Horton, both from Ottawa, recently were presented with a cheque for $75., their share of the royalties for the fiscal year 1972-73 on their invention of the primary radar extractor.

The primary radar extractor is designed to interface with primary air traffic control radars. This data can be transmitted over telephone lines from a remote radar site to an air traffic control centre. This inter-connection allows a controller to ascertain all range and azimuth data on aircraft on the primary radar screen.

The extractor will be incorporated into the new JETS air traffic control system.

Mr. Stanley-Jones, a graduate of the University of British Colombia, joined the Ministry in 1967. Mr. Horton joined the Ministry of Transport in 1966 after graduating from the University of Manitoba.

Martin Stanley-Jones and Don Horton inspect a primary radar extractor which the two engineers invented. Their invention marks the first time Ministry employees have received royalties from a licensed invention.



suggestion awards

primes à l'initiative

The Incentive Award Board has granted an award of $1,285 to Richard Levie, Chief of Financial Services for the New Montreal Airport Project Office. Mr. Levie suggested a new procedure for payments for construction on airports under the Airport Revolving Fund which has brought about substantial savings in interest charges.

Le Comité des primes d'encouragement a accordé une prime de $ 1 285 à M. Richard Levie, chef des Services financiers du nouvel aéroport de Montréal. M. Levie a suggéré une nouvelle procédure de paiement des travaux de construction, qui a permis de réaliser des économies considérables sur les intérêts.

James Gerbrandt, Vancouver, received a Suggestion Award of $845 for his suggestion of a change of power source in airport metal detectors.

M. James Gerbrandt de Vancouver a reçu une prime de $845 pour avoir proposé de modifier l'alimentation des détecteurs de métal utilisés dans les aéroports.

Lloyd Murray, Moncton, N.B., received $735 for his suggested modifications to mufflers on Sicard Snowmaster Blowers to reduce noise levels.

M. Lloyd Murray de Moncton (N.-B.) a reçu $735 pour avoir suggéré des modifications au silencieux des souffleuses Sicard Snowmaster, afin de les rendre moins bruyantes.

Mrs. Gloria Overall, Ottawa, received $210 for her suggestion to change from a manual to an electric typewriter with a special attachment for weather symbols at Ottawa International Airport.

Mme Gloria Overall d'Ottawa a reçu $210 pour avoir suggéré de remplacer une machine à écrire manuelle par une machine électrique munie d'un dispositif spécial pour les symboles météorologiques, à l'Aéroport international d'Ottawa.

Mr. G.G. Branch, Ottawa, Ontario, $300.00

Mr. Harold Foster, Richmond, B.C., $355.00

Mr. A.J. Menard, Pierrefond, Quebec, $640.00

Mr. C. Duquette, Ottawa, Ontario, $360 and $110

Mr. Heinz Schmeling, Edmonton, Alberta, $40.00

Mr. C.E. Statter and Mr. K.M. Harris, Victoria, B.C., $90.00

Mr. D.E. Buckler, Dartmouth, Nova Scotia, $35.00

Mr. W.E. Amell, Winnipeg, Manitoba, $50.00

Mr. G.J. Arsenault, Saint John, N.B., $60.00

Mr. J.-J. Fortin, Deux-Montagnes, Quebec, $100.00

Mr. S.W. Fleck, Winnipeg, Manitoba, $50.00

Mr. Gerald Wheeler, Delta, B.C., $90.00

Mr. C.W. Custance, Winnipeg, Manitoba, $60.00

Mr. R.M. Mareschal, Ottawa, Ontario, $50.00

Mrs. Lillace Davidson, Winnipeg, Manitoba, $90.00

Mr. Jullen Roy, Montreal, Quebec, $50.00

Mr. R.W. Taghan, Ottawa, Ontario, $50.00

Mr. James Hutchinson, Toronto, Ontario, $90.00 and $90.00

Mr. R.E. Mayer, Ottawa, Ontario, $115.00

Mr. T.R. Gorsush, Williams Lake, B.C., $50.00

Mr. F.H. Duffy, Headingly, Manitoba, $50.00

largest award
la plus grosse somme

The largest suggestion award ever granted to an employee of the Ministry of Transport was recently presented to Fred Keil of Ottawa.

Mr. Keil received a cheque for $2,750 from W.H. Huck, head of the Canadian Air Transportation Administration. An employee of the Design and Construction Division of the Telecommunication and Electronics Branch, Mr. Keil has been with the Ministry of Transport since 1942.

The award winner suggested reducing the glide path monitor area for Canadian airport runways. This will result in savings of $125,000 this year on installation costs at Montreal II and Ottawa International airports. Substantial savings will likely result in future installations.

Reducing the glide path monitor area to 300 feet by 200 feet from 300 feet by 400 feet will make possible substantial savings in construction, maintenance and snow removal costs.

La plus forte prime à l'initiative aux Transports

M. Fred Keil, d'Ottawa, a reçu récemment la plus forte prime à l'initative jamais accordée à un employé du ministère des Transports.

M. W.H. Huck, Administrateur des transports aériens, a remis à M. Keil un chèque de $2 750. M. Keil, qui fait partie de la Division de la conception et de la construction de la Direction des télécommunications et de l'électronique, est au service du Ministère depuis 1942.

La proposition qui a valu la prime à M. Keil consistait à réduire la zone couverte par le contrôleur du plan d'alignement de descente sur les pistes d'aéroports canadiens, ce qui a eu pour effet en 1973 de réduire de $125 000 les dépenses d'immobilisation à Mirabel et à l'aéroport international d'Ottawa. Il est probable que des économies importantes pourront encore être réalisées à l'avenir, à cause de cette suggestion.

En réduisant le secteur couvert par le contrôleur du plan d'alignement de descente de 300 pi. par 400 pi. à 300 pi. par 200 pi., il sera également possible de faire des économies importantes sur la construction, l'entretien et le déneigement.



The largest incentive award presentation to an employee of the Ministry of Transport —$2750 — was made to Fred Keil, left, by W.H. Huck, Air Transportation Administrator.

M.W.H. Huck, Administrateur des transports aériens, remet ici à Fred Keil d'Ottawa un chèque de $2750.

retirements

retraites

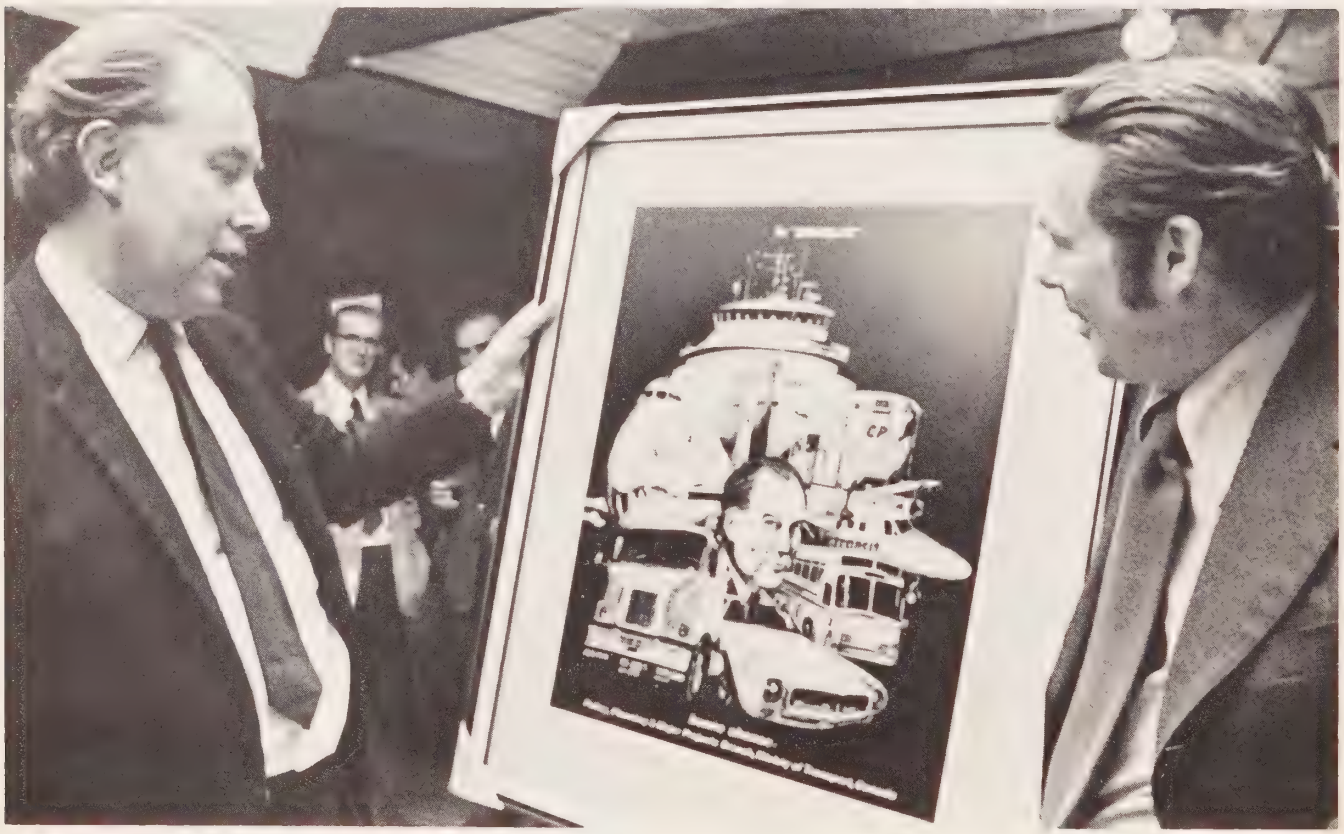
A veteran Canadian Coast Guard Captain, who served as chief officer, relieving master and permanent master on sixteen Coast Guard vessels, recently retired on his 67th birthday. Captain Ian McTavish's last assignment in the Maritimes Region was Master of the search and rescue vessel CCGS Daring.

Un vétéran de la Garde côtière canadienne, qui a servi comme second, capitaine de relève et capitaine en titre sur 16 navires, a récemment pris sa retraite le jour de son 67ième anniversaire. Avant de quitter le service de la Garde côtière, le capitaine Ian McTavish était affecté dans les Maritimes comme capitaine d'un navire de recherches et de sauvetage, le n.g.c.c. *Daring.*



Charles Halton, former Senior Ministry Executive of Policy, Planning and Major Projects, and Alan Conboy, Director of Policy Implementation, look over a special piece of art work presented to Mr. Halton at a reception in his honour. Mr. Halton has moved to Australia to become head of the Australian Department of Transport.

M. Charles Halton, conseiller exécutif du Ministère pour la politique, la planification et les projets importants et M. Alan Conboy, directeur de la mise en application de la politique, admirent l'oeuvre d'art qu'a reçue M. Halton lors d'une réception donnée en son honneur. M. Halton part pour l'Australie où il assumera le portefeuille des Transports.



Three veteran employees of the Saint John Marine Services Base retired recently. Arnold Titus served nineteen years and eleven months, Joseph Chetwyrd twenty years, and Robert Winchester sixteen years.

Les Cavalier, A/Chief Contracts Division, Airports and Construction Services, recently retired after 30 years with the Ministry of Transport. Mr. Cavalier was recently ordained as a Deacon of the Anglican Church.

Henry Batt, who has served in Air Traffic Control Operations since 1946, has retired to Sidney, British Colombia, to pursue his hobbies of oil painting, golfing and music.

H.S. Booth has retired from the Research and Development section of Telecommunications and Electronics Branch after 35 years of service. Mr. Booth began his career as a radio operator and moved to Ottawa in 1960 to take up a position as an electronics technician.



George Duncan, Chief, Accounting and Equipment, in the Materiel Management Branch in Ottawa, has retired after 35 years in the Public Service. Mr. and Mrs. Duncan were presented with a set of luggage at a reception held in their honour in Ottawa.

M. George Duncan, chef de la comptabilité et du matériel à la Direction de la gestion du matériel à Ottawa, a pris sa retraite après avoir passé 35 ans au service de la Fonction publique. M. et Mme Duncan ont reçu un ensemble de valises lors de la réception donnée en leur honneur à Ottawa.

Trois employés de longue date des Services de la marine à la base de Saint-Jean (N.-B.) ont récemment pris leur retraite. M. Arnold Titus y a travaillé 19 ans et 11 mois, J. Joseph Chetwyrd, 20 ans et M. Robert Winchester, 16 ans.

M. Les Cavalier, chef suppléant de la Division des contrats, Service des aéroports et de la construction, a récemment pris sa retraite après avoir passé 30 ans au service du ministère des Transports. M. Cavalier a récemment été ordonné membre du Conseil de fabrique de l'Eglise anglicane.

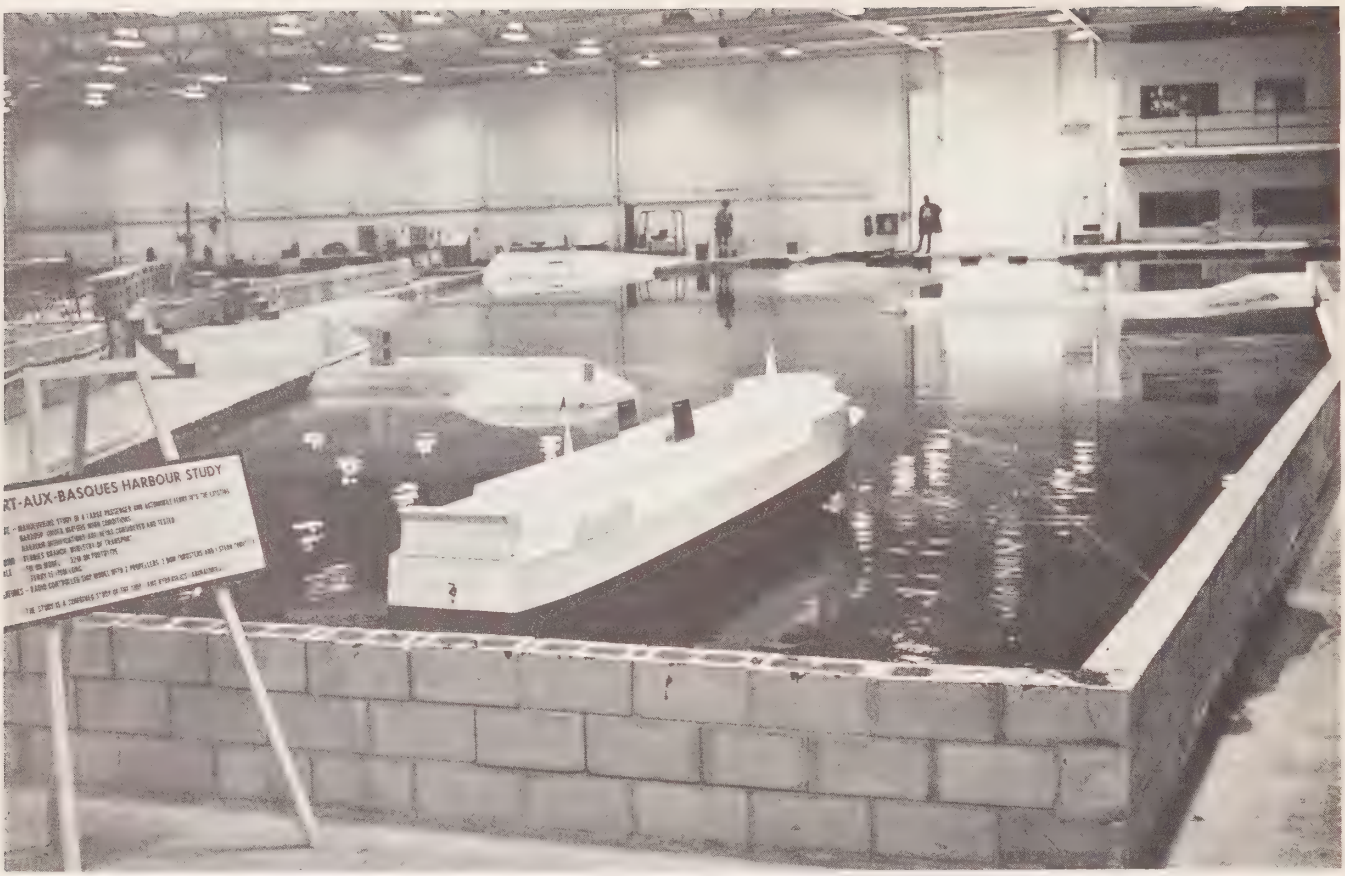
M. Henry Batt, qui travaillait depuis 1946 dans le domaine du contrôle la circulation aérienne, a pris sa retraite. Il résidera désormais à Sidney (C.-B.) où il pourra s'adonner à ses passe-temps favoris, la peinture, le golf et la musique.

M. H.S. Booth a pris sa retraite après avoir passé 35 ans à la Section des recherches et du développement de la Direction des télécommunications et de l'électronique. M. Booth a commencé sa carrière comme opérateur radio et est ensuite venu à Ottawa en 1960 pour remplir les fonctions de technicien en électronique.

C.F. Brown has retired after 31 years with the Ministry as a radio operator. Mr. Brown spent a number of years in the north as an operator and his last few years at the Winnipeg Aeradio Station. He was presented with a plaque of gold-plated earphones by his co-workers at a dinner in his honour.

M. C.F. Brown a pris sa retraite après avoir passé 31 ans au service du Ministère à titre d'opérateur radio. M. Brown a passé un certain nombre d'années dans le Nord comme opérateur et a travaillé, ces dernières années, à la station radioaéronautique de Winnipeg.





Above: The National Research Council's Hydraulics Laboratory constructed a model of the harbour at Port-aux-Basques, Newfoundland, for the Surface Administration's Marine and Ferry Branch. The purpose was to determine the feasibility of operating a 300-car ferry in the existing harbour facilities. Results demonstrate that it is possible but certain limitations exist due to wind currents and physical encumbrances such as Vardy's Island. Removal of part of the island could greatly increase the manoeuvrability of vessels without affecting its breakwater characteristics.

Le Laboratoire d'hydrodynamique du Conseil national de recherches du Canada a construit un modèle du port de Port-aux-Basques (T.N.) pour le compte de la Direction de la marine et des traversiers de l'Administration des transports de surface. Cette recherche vise à démontrer la possibilité d'exploiter un traversier pouvant transporter 300 automobiles en utilisant les installations portuaires actuelles.

Top Right: The first official bilateral meeting between Canadian and U.S. experts in the design, construction and operation of icebreakers was held in Ottawa this fall to open the way for an increased exchange of information on the development of the fleet of both countries. Discussing the unique capabilities of the CCGS John A. Macdonald are: left to right, Capt. Ivan Green, Commandant of the Canadian Coast Guard, Capt. T.F. McKenna, U.S.C.G., Cdr. B.C. Roberts, U.S.C.G., C.F. Collins, Department of Supply and Services, Henry Thomson, C.C.G., R.A. Lawrence, project manager for the M.O.T. Icebreaker Development Program, and Cdr. Robert Overton, U.S.C.G.

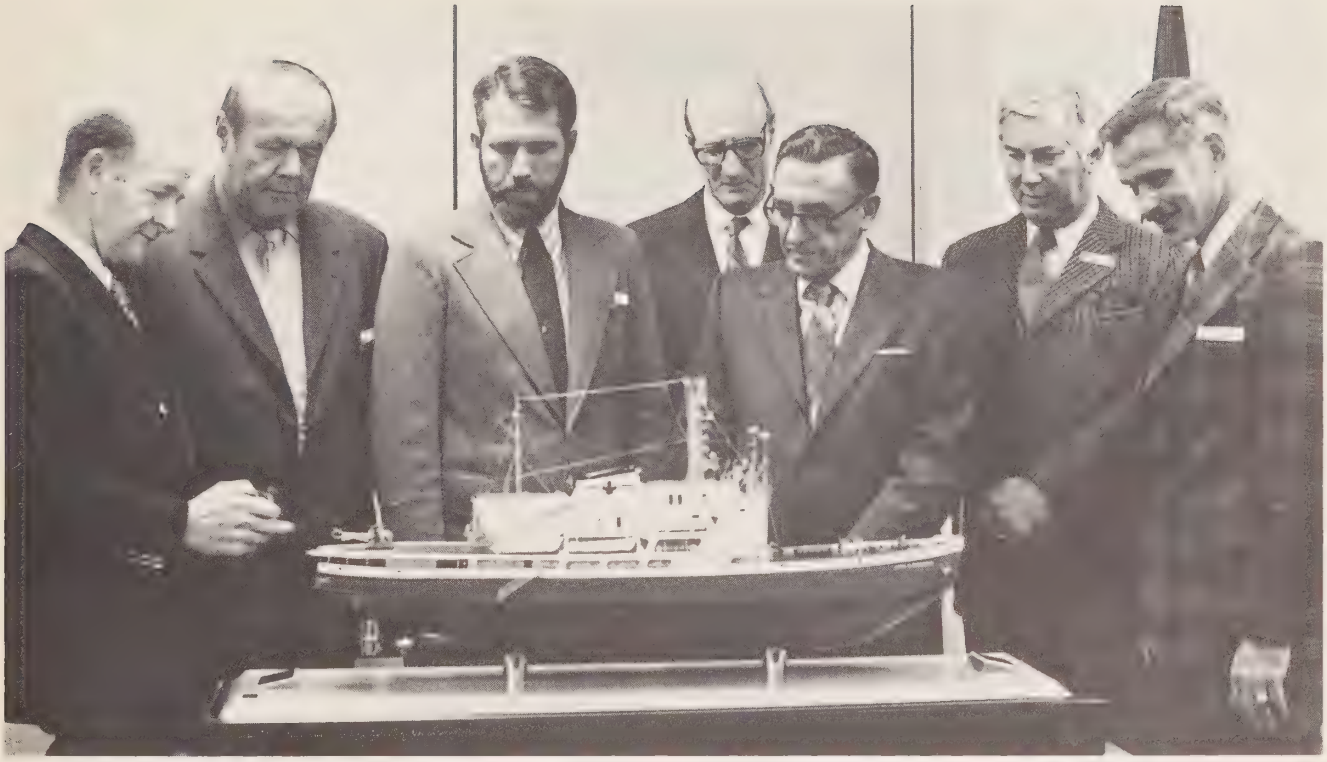
Une première rencontre officielle des experts canadiens et américains en matière de dessin, de construction et d'exploitation de brise-glace, s'est déroulée à Ottawa récemment. Cet échange d'information a pour but d'améliorer les flottes de la Garde côtière des deux pays. Les experts discutent ici des possibilités offertes par le brise-glace John A. MacDonald de la Garde côtière canadienne.

Middle Right: A $930,000 Ministry of Transport air terminal for the Timmins Airport was officially opened recently. The new terminal complex houses operations and administration facilities and public areas for passengers. An additional $470,000 was provided for parking facilities, a new access road and related improvements for the federally-operated airport.

L'inauguration officielle de la nouvelle aérogare de Timmins, à laquelle le ministère des Transports a consacré $930 000, a eu lieu récemment. Le nouvel immeuble abrite les locaux des services d'exploitation et d'administration ainsi que les salles réservées aux passagers. Un montant supplémentaire de $470 000 a été affecté à l'aménagement d'un parc de stationnement, à la construction d'une nouvelle voie d'accès et à divers travaux d'amélioration dans cet aéroport exploité par le ministère des Transports.

Bottom Right: A $103,000 air terminal was recently opened at the Waterloo-Wellington Airport in southwestern Ontario. The six thousand square feet of terminal space is part of a one-million-dollar Ministry contribution to the airport over the past 27 years. The terminal is named after one of the regional airport's founders, Norman C. Schneider. Mr. Schneider assembled a group of businessmen who acquired the land shortly after World War II and built the first facilities for the regional airport.

Une aérogare de $103 000 a récemment été ouvert à l'aéroport de Waterloo-Wellington, au sud-ouest de l'Ontario. Avec cette aérogare de 6 000 pieds carrés, l'aéroport aura reçu du Ministère des subventions totalisant un million de dollars depuis 27 ans. L'aérogare a reçu le nom d'un des fondateurs de l'aéroport régional, Norman C. Schneider qui peu après la seconde guerre mondiale, avait réuni un groupe d'hommes d'affaires pour acheter le terrain et construire les premières installations de l'aéroport






WATERLOO - WELLINGTON AIRPORT

ministry scholarships

Six scholarships, each worth $500, have been awarded to sons and daughters of Ministry of Transport employees who are beginning a university education.

The Association of Universities and Colleges of Canada selects the first-year students each year who are to receive scholarships.

The scholarship fund was created in 1963 from donations given by transport employees who had participated in a group insurance plan which was replaced by the government surgical medical insurance program. Some $62,500 was donated and a board of trustees was established to administer the funds and determine policy.



George Weldon, Chief Engineer of CCGS John Cabot *looks on while his daughter, Marian, a student at Memorial University, is presented with a Ministry scholarship by W.G. George, Area Manager of Marine Services for the Newfoundland and Labrador Region.*



Peter De Roche, son of J.H. De Roche, Telecommunications Station Manager at Antigonish, Nova Scotia, was presented with a scholarship by Rex Tilley of the Canadian Air Transportation Administration, Atlantic Region.

Six bourses de $500 chacune ont été décernées aux enfants d'employés du ministère des Transports, qui commencent leurs études universitaires.

Comme chaque année, c'est l'Association des universités et des collèges du Canada qui a choisi les lauréats parmi des étudiants de première année.

La caisse de bourse avait été créée en 1963 grâce aux dons faits par des employés du Ministère qui cotisaient à un régime d'assurance collective; ce régime ayant été remplacé par le régime d'assurance chirurgicale médicale du gouvernement, les quelque $62 500 recueillis avaient été confiés à un conseil d'administration en vue de la création d'un programme annuel de bourses d'étude.

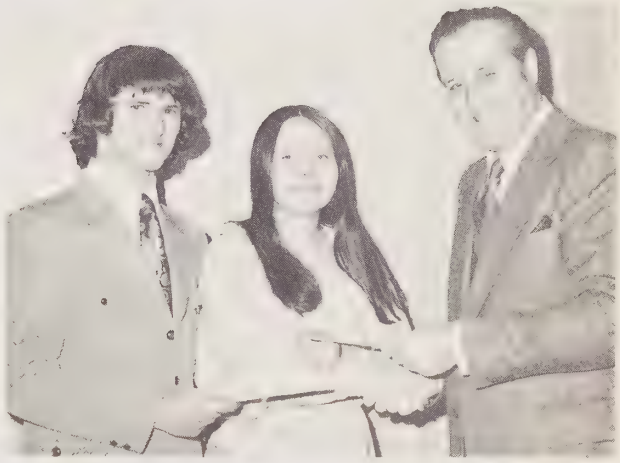
George Weldon, ingénieur en chef à bord du John Cabot, *navire de la Garde côtière canadienne, apparait ici en compagnie de sa fille Marian, récipiendaire d'une bourse d'étude du Ministère. Etudiante à l'Université Memorial, Mlle Weldon reçoit sa bourse des mains de M. W.C. George, responsable des Services maritimes pour la région de Terre-Neuve et du Labrador.*

Peter De Roche, fils de M. J.M. De Roche, directeur de la station de télécommunications à Antigonish (N.-E.), reçoit une bourse d'étude de M. Rex Tilley de l'Administration des transports aériens (région de l'Atlantique).

bourses du ministère

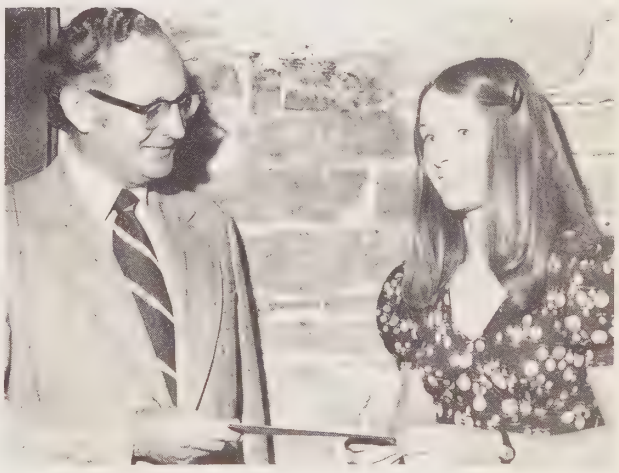
Ministry of Transport Scholarships were presented to Allen Tucker and Geraldine Walsh by Rex Tilley, Special Projects Officer, Air Administration, Atlantic Region. Allen is the son of A.J. Tucker, an Electronics Technician at St. John's, and Geraldine is the daughter of W.P. Walsh of St. John's Marine Aeradio.

M. Rex Tilley, agent de projets spéciaux de l'Administration des transports aériens (région de l'Atlantique), remet des bourses d'étude à Allen Tucker et Geraldine Walsh. Allen est le fils de M. A.J. Tucker, technicien en électronique à St. John's et Geraldine, la fille de M. W.P. Walsh à la station de radio maritime de la même ville.



Karen Tippett is presented with her scholarship by W.A. O'Neil, Deputy Marine Administrator. Karen, the daughter of G.P. Tippett, Chief of the Marine Services Budgets and Financial Analysis section, is working towards her Bachelor of Science degree at Carleton University in Ottawa.

Mlle Karen Tippet reçoit sa bourse de M. W.A. O'Neil, administrateur adjoint des transports maritimes. Karen, fille de G.P. Tippett, chef de la section d'analyse budgétaire et financière des Services de la Marine, fait des études à l'Université Carleton d'Ottawa en vue d'obtenir un baccalauréat en sciences.



J.K. Brown, Chief Architect, Construction Engineering and Architectural Branch (Air), congratulates Andre Dabrowski after presenting him with a Ministry scholarship. Andre, a science student at Ottawa University, is the son of Leopold Dabrowski, the Deputy Chief of Program and Research at Quebec Airport.

M. J.K. Brown, architecte en chef de la Direction de l'architecture et du génie civil (Administration des transports aériens), félicite M. André Dabrowski après lui avoir présenté une bourse du Ministère. Etudiant en sciences à l'Université d'Ottawa, André est le fils de Léopold Dabrowski, Chef adjoint des programmes et de la recherche à l'aéroport de Québec.





Transport Minister Jean Marchand, one of the first non-paying passengers, sits at the controls of the "quiet" short haul/STOL Airtransit Canada Twin Otter. The Minister travelled from Ottawa to Quebec City in the DHC-6 to address a meeting of the Air Industries Association of Canada.

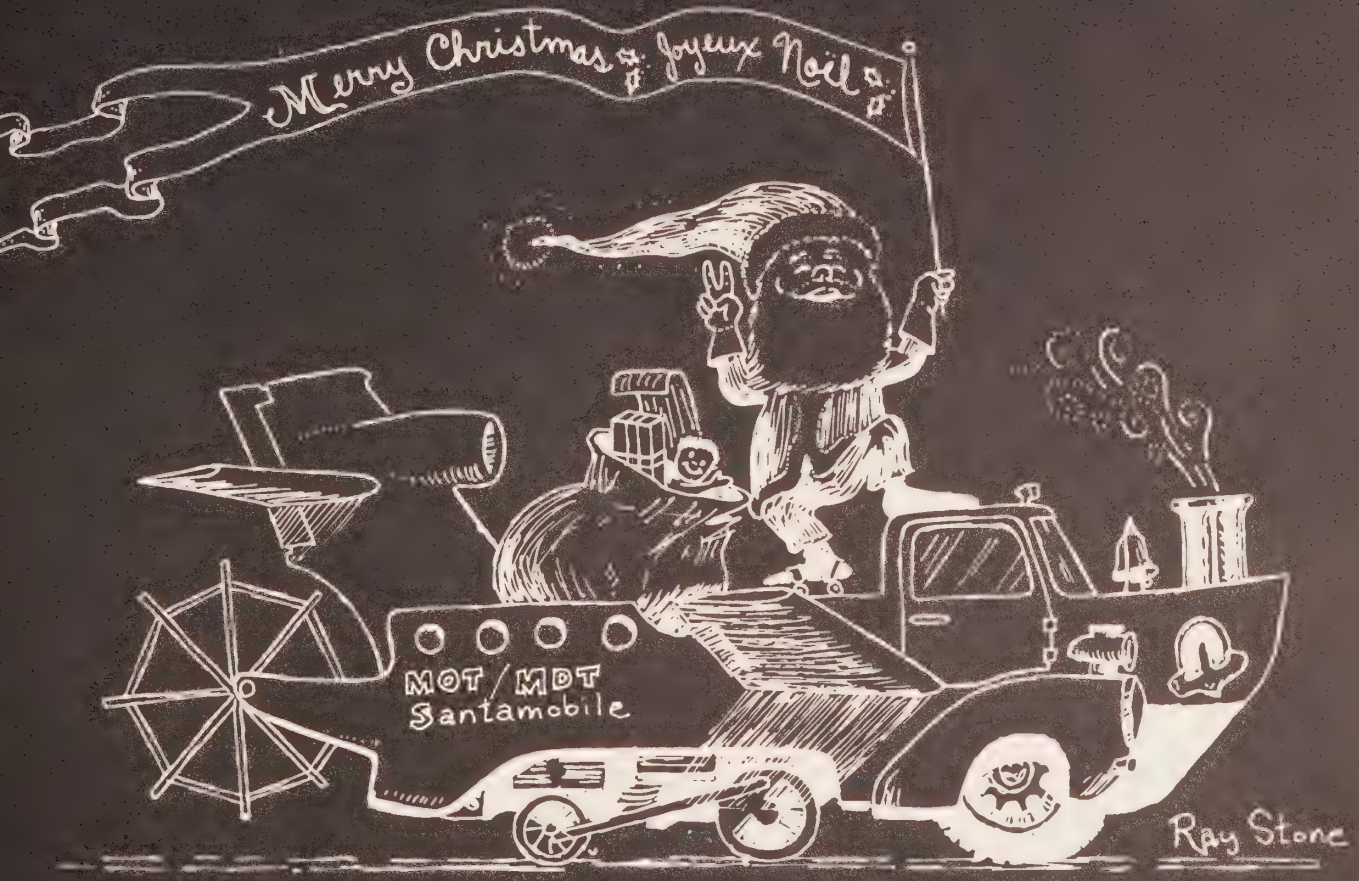
Le ministre des Transports, Monsieur Jean Marchand, un des premiers passagers à voyager gratuitement à bord des avions ADAC, agit ici comme pilote d'un Twin Otter d'Airtransit. Le ministre qui se rendait à Québec pour prendre la parole devant les membres de l'Association des industries aéronautiques du Canada, voyageait à bord de cet avion à décollage et atterrissage courts.

The initial implementation of the Treasury Board Guidelines relative to the identification and designation of the language requirements of positions was directed by a Ministry Coordination Committee. Some of the members of the Committee were, from left to right: R.F. Black, Head of the Project Team that developed systems and procedures; M. Azam, Ministry Language Requirements Coordinator; C.M. Whiticar, Chairman of the Coordination Committee; G.M. Charlebois, Treasury Board Representative, J.C. Thibault, Public Service Commission Representative and R.F. Lalonde, Secretary of the Coordination Committee.

La mise en oeuvre initiale des lignes directrices du Conseil du Trésor relatives à l'identification et la désignation des exigences linguistiques des postes a été orientée par un comité ministériel de coordination. Quelques uns des membres du comité étaient, de gauche à droite: R.F. Black, chef du groupe de travail qui a élaboré les systèmes et les procédures; M. Azam, Coodinateur des exigences linguistiques du ministère; C.M. Whiticar, Président du Comité de coordination; G.M. Charlebois, représentant du Conseil du Trésor; J.C. Thibault, représentant de la Commission de la Fonction publique et R.F. Lalonde, secrétaire du Comité de coordination.



Joyeux Noël





Two trapped British crewman were pulled to safety moments after divers clambered atop the British submarine Pisces III. *This dramatic photograph was taken from the bow of* CCGS John Cabot *which hauled the* Pisces III *to the surface from the muddy bottom of the Atlantic —1500 feet below.* *See story on Page 4.*

Prisonniers du Pisces III, *les deux membres d'équipage britanniques de ce sous-marin ont eu la vie sauve lorsque leur navire a été ramené à la surface par le* John Cabot, *navire de la Garde côtière canadienne. Au moment du sauvetage, le petit sous-marin était sur une surface boueuse, à 1 500 pieds au fond de l'Atlantique. Cette photo a été prise à bord du navire canadien.*

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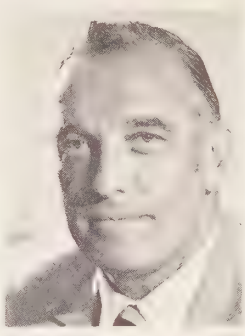
The icebreaker, C.C.G.S. J.E. Bernier and ice patrol helicopter off Quebec City. One hundred years ago the "Great Ice Shove" did thousands of dollars damage to ships and wharves at Quebec City. *See Story page 7.*

Le brise-glace J.E. Bernier et un hélicoptère de la Garde côtière près de la ville de Québec.

CONTENTS/SOMMAIRE

2. Transport Council Message
   Message du Conseil des Transports
4. Goose Bay
7. Great Ice Shove
11. A Plane is Down
16. Ottawa–Montréal en 75 minutes
19. Seeing Better Electronically
21. Transcan/Mini-reportages

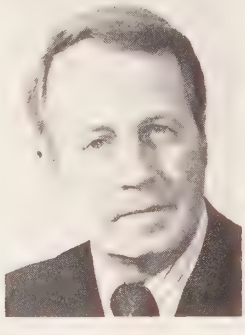
transportation council / conseil des transports

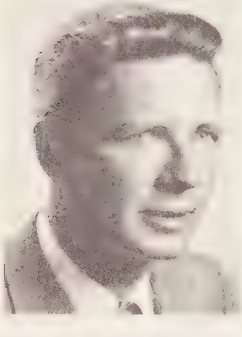
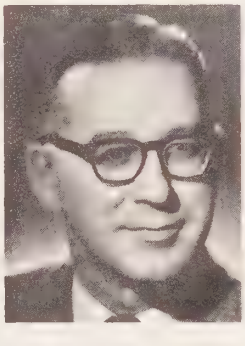


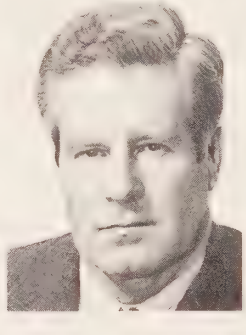
Hon. Jean Marchand
O.G. Stoner
J. Guay
E.J. Benson



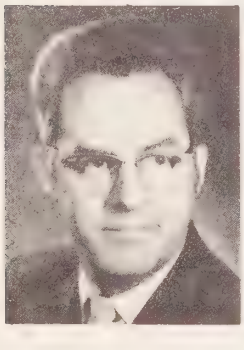
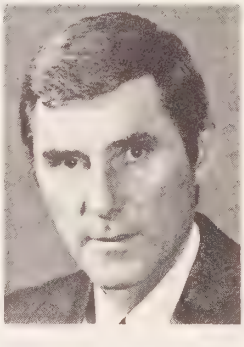



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W.M. Gilchrist
Mel Hagglund
W.H. Huck

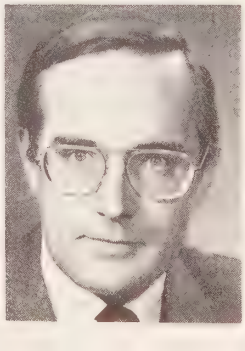


Robert Turner
P.D. Normandeau
Lucie Dion
M.D. Armstrong



John Gray
André Laframboise
J.M. Davey
J.Y. Clarke



W.F. Nelson
M.E. Butler
Guy Lavigueur
Del Taylor

message

Canada has a great stake in the safety and facility of movement of shipping along its seaboards and deep inland waterways with minimum pollution. The Canadian Coast Guard, often cited for its dramatic action and quick response in maritime emergencies, also has this important responsibility of ensuring the ongoing safety of navigation in Canadian waters.

I find that the numerous missions and roles of the Coast Guard are little known and understood, not only by the Canadian public generally, but by many within the Ministry itself.

There are few, if any activities more exciting than those carried out by the ships of our fleet, and therefore few careers more stimulating or challenging for young Canadians than those offered by the Coast Guard.

All of us who serve in the Ministry have a responsibility to make ourselves aware of at least the major endeavours of the Canadian Coast Guard which, through its own college in Sydney, N.S., trains officers for such varied duties as icebreaking, maintenance of navigational aids, search and rescue, weather information, traffic surveillance, environmental research and pollution control.

Much is to be gained by broadening our knowledge of the Ministry's involvement in all aspects of marine, as well as air and surface transportation. We are now 125,000 working in the Ministry and its associated corporations. I would like to see each one of us well able to talk about the activities of the Ministry as a whole. This would be a significant move towards stimulating better public awareness and understanding of our many projects and programs.



Roy Illing

Il importe beaucoup au Canada, pays où les transports par eaux sont d'un intérêt majeur, d'assurer la sécurité maritime le long des côtes et des artères fluviales qui mènent jusqu'à l'intérieur du pays, tout en minimisant les risques de pollution.

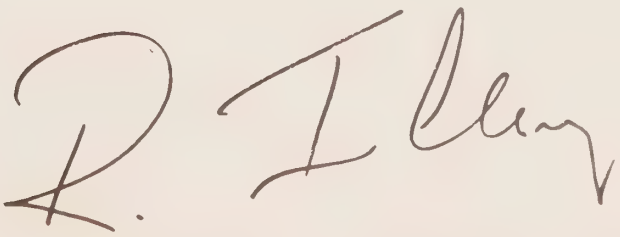
C'est à la Garde côtière canadienne, mieux connue pour ses exploits et son action souvent dramatique dans les situations d'urgence, qu'incombe cette responsabilité journalière d'assurer la sécurité de la navigation le long de toutes les voies navigables du Canada.

Je crois que le rôle et les missions nombreuses de la Garde côtière méritent d'être mieux connus, non seulement dans le public mais aussi à travers le ministère.

Peu d'activités sont aussi passionnantes que celles entreprises par la flotte de la Garde côtière et, par conséquent, peu de carrières sont aussi enrichissantes que celles qui s'offrent aux jeunes qui entrent à son service.

Nous devrions tous, comme employés du ministère des Transports, être davantage au courant des principales activités de la Garde côtière. Elle administre son propre collège, à Sydney en Nouvelle-Ecosse, pour former des experts qui travaillent dans une multitude de domaines en mer et sur terre ferme. Je n'en nomme que quelques-uns: l'entretien des aides à la navigation, la recherche et le sauvetage, les services de brise-glace, la surveillance de la circulation maritime, le contrôle de la pollution et des missions de recherches scientifiques.

Il est à notre avantage d'élargir nos connaissances des activités de notre ministère dans tous les domaines; aussi bien en ce qui a trait au transport maritime qu'aérien et de surface. Nous comptons maintenant 125,000 employés dans le ministère des Transports et les sociétés qui y sont associées. Il serait souhaitable que chacun d'entre nous soit assez bien renseigné pour parler avec aise des activités de l'ensemble du ministère. Le public serait alors mieux averti et aurait une meilleure compréhension de nos projets et programmes.





GOOSE BAY

by R.G. Towers
Regional Public Affairs Officer
Atlantic Region

Goose Bay, Labrador, is an airport, a town, a military base and much more.

It also is unique. The town's 500 citizens are deeply involved with the Ministry of Transport, which is responsible for coordinating the town's essential services. Since last year the Ministry's Air Administration has handled the Administration of Goose Bay, a young town with an impressive future.

HISTORY

This town grew out of the efforts of a small surveying party led by Eric Fry, who arrived in the area in 1941. Their purpose was to locate a suit-



Goose Bay, Labrador, the airport area from the air.

able airport site from which Ferry Command, a small force of dedicated Canadian and British pilots, could fly bombers, fighters and transport aircraft to Britain.

After some preliminary surveys in various areas along the shores of Lake Melville, Fry spotted what appeared to be a plateau some two or three miles from the shore line. After some discussion with local residents, he obtained a guide to take him to the plateau, and on arrival found the terrace was as flat as a billiard table and higher than the surrounding terrain. A perfect site for an airfield. He immediately dispatched a report to Ottawa indicating that he had found a suitable site and recommending the site be chosen.

During the preliminary survey, two American Flying Boats (PBY's) passed overhead, obviously carrying out an aerial survey of the land. It was learned later that President Roosevelt's son, Elliot, was aboard one of the aircraft, engaged in the same task as Eric Fry: to locate a suitable airport site.

"THE GOOSE IS BORN"

Not long later, the R.C.A.F. sent an engineering crew to survey the newly-named Goose Bay site, and, three months after Fry's initial survey, men, materials and machinery began to arrive to construct the new airport. One year later, allied bombers and fighters were passing through the airport in a steady stream.

During the war years, the base served as an integral part of the war effort in Europe and, after hostilities were over, it was used as a small RCAF outpost with the United States Air Force retaining a group of airmen there until the early fifties.

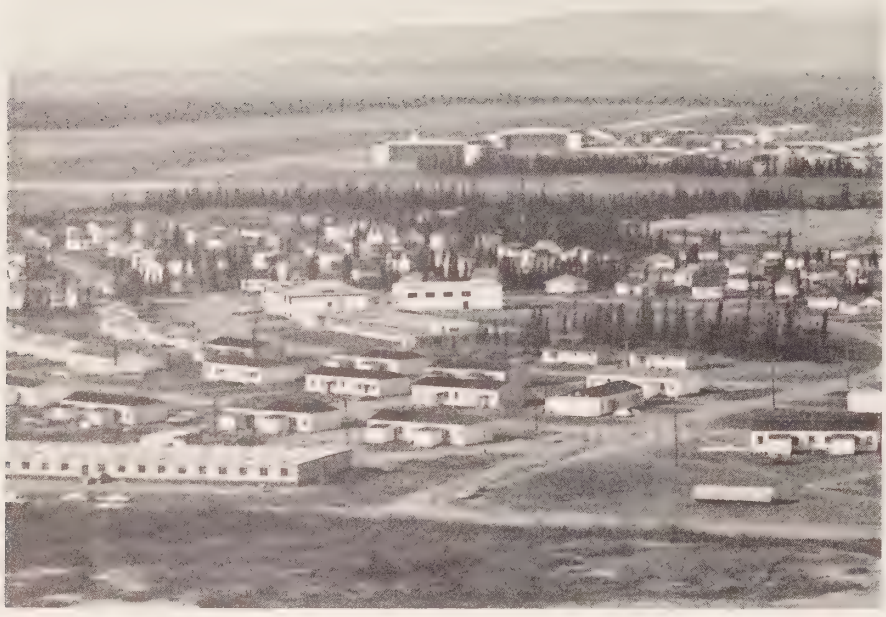
With establishment of the United States North East Air Command in 1959 came a renewed interest in the base, leading to a twenty-year lease between the Government of Canada and the United States for the properties on the south side of the base. With the formation of the United States Air Force Strategic Air Command, the total support strength of American personnel reached the 3,000 mark. Their man role then, as now, is to support Strategic Air Command Manned Bomber Strike Force with fuel tanker aircraft at a high degree of readiness -24 hours a day -365 days a year.

MINISTRY PARTICIPATION

In 1967, the Canadian Armed Forces section of the base was closed down and the Ministry of Transport Airports Branch took over full operation and administration of the former base area on the north side of the airport. Included were two large housing sites with a total of 302 houses. Today, Canadian Forces personnel operate the Air Traffic Control centre providing a service for civil operators, Canadian Forces Aircraft, Royal Air Force Vulcans, and the United States Air Force KC-135 tanker and support aircraft.

The twenty-year lease between the two governments terminated in June, 1972. The contract was extended for one year and during that period an agreement for operation of the base was negotiated under which the Ministry of Transport Airports and Properties Branch assumed all responsibilities and obligations for a period of three years, up to June 30, 1976.

For the most part, former employees of the United States Air Force merely changed employers. in addition, some requirements had to be met by recruiting labour throughout the Maritimes when the local source had been exhausted. The Ministry of Transport moved from the north side of the base to the former USAF area south side, and negotiations are under way to turn all surplus buildings, as well as a number of dwellings on the north side over to the Province of Newfoundland. These dwellings should help to ease the chronic housing shortage now in the area.



The Ministry of Transport is responsible for administration of the town's facilities such as power, water, and transportation, as well as airport facilities.

The United States Air Force continues to use Goose Bay as a support base in their Strategic Air Command system. KC135 tanker aircraft are pictured here.



MINISTRY PRAISED

"In changing responsibility there is a great deal of confusion and we have nothing but praise for the way the Ministry is handling it", says Captain J. O'Rourke, USAF base information officer. "We know the Ministry has the expertise for operating airports, but for running a small town the operation is vastly different".

The Ministry at the moment is Goose Bay's town council; operating and providing all the electrical power and water for Goose Bay's 1,700 furnished homes for military and transport personnel. It also operates restaurant facilities and quarters for travelling USAF servicemen and government employees and the tallest building on the base, a six storey aluminum building aptly nicknamed "the Goose Hilton". Winter in Labrador will put the Ministry's expertise to the test in coping with the heavy snowfall. Up to 140 inches is recorded annually at Goose Bay Airport.

FUTURE

What does the crystal ball say for the future of the 12,000 people of Goose Bay and the nearby community of Happy Valley?

In addition to industry there will probably be increased tourism, a national park in the area and perhaps major hydroelectric developments with the harnessing of the lower reaches of the mightly Churchill River. Goose Bay will continue to grow in stature as well as size.

The Great Ice Shove

by Thomas E. Appleton



This drawing appeared in Canadian Illustrated News *on 23 May 1874. The CGS* Napoleon III, *with two black funnels, may be seen on the left of the picture against the corner of the dock. Behind her are other damaged ships. The large sidewheeler at the right, the Grand Trunk Railway ferry, was undamaged but in the foreground is the steamboat,* Castor *which was totally destroyed.*

FLOOD CONTROL ON THE ST LAWRENCE IS ONE OF THE IMPORTANT TASKS OF CANADIAN COAST GUARD ICEBREAKERS. A CENTURY AGO THERE WERE NO ICEBREAKERS AND EACH SPRING THE ICE BRIDGE WOULD BUILD UP ABOVE QUEBEC. IN THE WINTER PEOPLE WOULD CROSS THE RIVER ON THE ICE BRIDGE WHICH WAS STRONG ENOUGH TO CARRY CARTS AND PRODUCE. BUT WHEN IT GAVE WAY, IT WAS AN ANNUAL THRILL TO ONLOOKERS BUT A THREAT TO THE ENTIRE WATERFRONT. THE RESULTS WERE OFTEN DISASTROUS. HERE IS THE STORY OF ONE OF THE WORST BREAKUPS, THE "GREAT ICE SHOVE" OF 1874.

On May 8, 1874, the iron screw steamship *Napoleon III*, pride of the Marine and Fisheries fleet, lay in Winter quarters at Quebec with her consort the paddle steamer *Druid* and dozens of other steamboats, sailing ships and barges. This mass of vessels, protected from drifting ice by booms, awaited only break-up of the ice bridge above Quebec before opening another season of St. Lawrence navigation. A change of wind was in the offing; already the bright morning air was clouding over to a mild Southerly breeze, and any moment now the ice bridge would collapse.

On board the *Napoleon*, complete with stores and ready for sea, the crew raised steam in readiness for departure on the following morning with lightships and buoys for the lower Gulf; from her two black funnels a column of smoke floated gently upwards as cinders pattered down impartially among the clutter of vessels rafted nearby. Outside of this tier of moorings, an anchored sailing ship called the *Harald Haarfanger* was pushing her luck in this

exposed position while waiting for a berth. Otherwise the swift ebb tide was devoid of shipping which sheltered apprehensively in every cove and behind every dock. By early afternoon the temperature was rising steadily and, as the wind freshened, crowds of expectant people who lined the boardwalk high above the ancient ramparts knew that they would not have long to wait.

At twenty-five past three the dam burst with an almighty roar and tens of thousands of tons of ice were released with uncontrolled momentum. A young reporter from the *Morning Chronicle,. rushing out of his office scattering newsprint in a trail of litter, was able to reach a vantage point from which he hurriedly noted:*

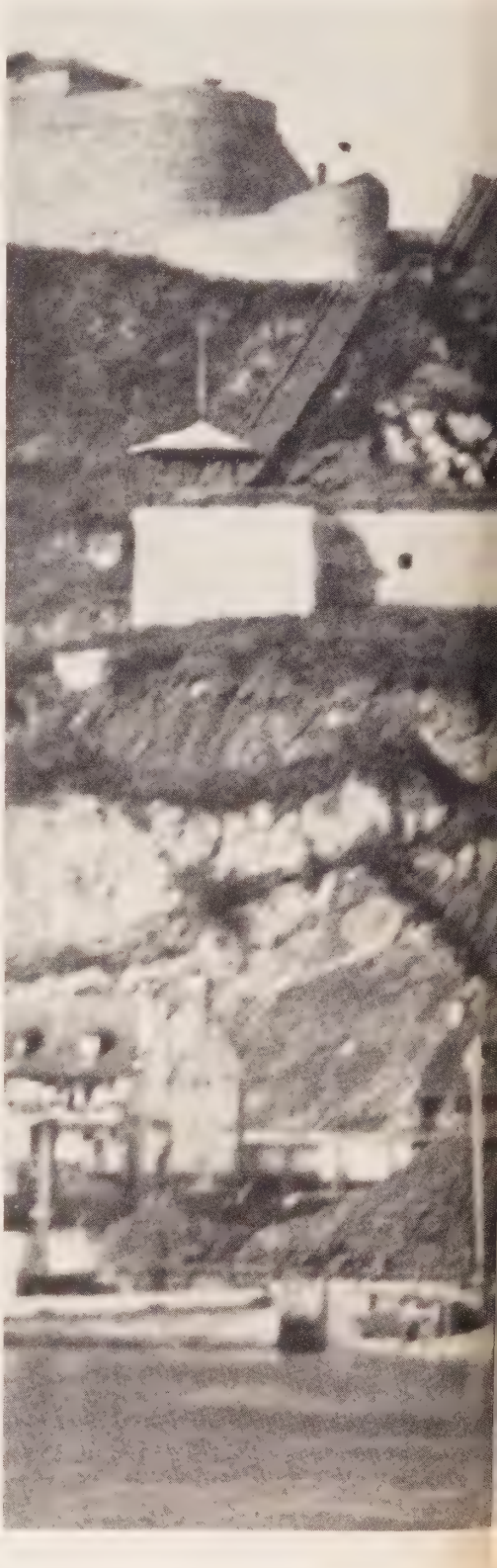
> "...People became wild with excitement and thronged the Durham Terrace. The whole field of ice extending from shore to shore and down the River as far as the eye can see is moving steadily and with irresistible power. The noise caused by the grinding action of the different pieces of ice upon each other becomes louder and louder as the jam becomes greater..."

Majestic as this must have seemed from the boardwalk, it was ominous indeed to those who hurriedly scrambled across the assembled ships for safety on the waterfront. The *Harald Haarfanger* was the first casualty; reeling under the onslaught, her cable parted and she swung out of control against a nearby schooner as the pair were engulfed and swept into the mass of shipping, the entire fleet grinding and heaving against the dock in a confusion of splintered wood and screaming metal. The *Napoleon* was driven against the corner of the wharf and over sixty feet of her port side, to a depth of eighteen feet, ripped open under ice pressure as she reeled to the blow. On the starboard side the knuckle of the dock punched a thirty-foot gash and the government steamer sank in fifteen feet of water, settling into the mud as she went.

On all sides vessels were crushed like matchwood to leave only a confusion of masts and yards at drunken angles as a torrent of ice and water filled them to the rails. The *Druid* was lucky and although at first she was thought to be damaged her stout iron hull bounced back under a shower of smoke and ashes and she was none the worse. By a miracle no lives were lost but the total damage to shipping was estimated to reach a million dollars, a loss at least tenfold in present day values. An hour afterwards the Marine Agent went down to survey the wreck.

The Marine Agent at Quebec was John U. Gregory who was a remarkable man and something of a character, holding that position from 1867 till 1907. Gregory was born at Troy, N.Y., his father being of English descent and his mother 'Canadienne' He came to Montreal quite early in life where he finished his education before joining the public service of the Old Province of Canada in 1863. In the marine sense, Mr. Gregory was extremely influential, holding also the offices of Justice of the Peace, Superintendent of the Harbour Police, Shipping Master, Commissioner for Wrecks and representative of the British Board of Trade; in social life he was equally prominent as Commodore of the Quebec Yacht Club (1885-87) and as a Member of the Quebec Literary and Historical Society where he was popular as a lecturer and wrote a number of papers on local history. Everybody knew Mr. Gregory and, second only to William Smith, the Deputy Minister, he was probably the most important personage in the entire service.

When news of the *Napoleon* disaster reached Ottawa by telegraph, first reactions were to sell the wreck by auction and the Marine Agent was so instructed. However, they reckoned without Mr. Gregory who was utterly determined that he was not going to lose the services of the



most powerful ship on the River when he knew that there was slim chance of money for a replacement. Under the immediate direction of Louis Gagné, his master carpenter, Gregory raised the wreck and put

The Napoleon III *and* Druid *alongside the Agency at Queen's Wharf, Quebec, about 1875. Note that the* Napoleon *has the spar deck fitted by Mr. Gregory. The* Druid, *which came to Quebec from the Nova Scotia service, had previously been a Confederate blockade runner in the American Civil war. She was afloat until 1936. This photograph, by courtesy of Notman Archives at McGill University, Montreal, was enlarged from a general view which accounts for the lack of precision. The original landscape photograph is of course beautifully clear and in the best tradition of William Notam, one of Canada's most famous photographers of the time.*





Mr. J.U. Gregory, Marine Agent for the Department of Marine and Fisheries at Quebec, photographed in his office about 1893. Note the bust of Sir John A. Macdonald who from time to time was a passenger in the old Druid..

her into drydock. Brushing aside suggestions from Ottawa that *Napoleon* could perhaps be retained if stripped and converted for use as a relief lightship, the Marine Agent was soon able to report:

> "As soon as the *Napoleon III* was got into drydock I caused a survey to be held which resulted in my suggestion to the Department that by covering her in with a spar deck she could be made to carry between three and four thousand barrels, and owing to her great strength of hull and powerful machinery she could advantageously perform the duties required to meet the demands of this district in connection with the coast and lighthouse service. My suggestion was approved, and in accordance with instructions received, I caused the necessary work to be at once proceeded with in order to have her ready for the opening of navigation in 1875."

The *Napoleon* thus got a new lease of life, landing barrels of mineral oil on countless trips to lighthouses in the Gulf of St. Lawrence and Newfoundland until she met her end by stranding, at Little Glace Bay in Cape Breton, in 1890.

As to the Great Ice Shove, as it was called, the *Morning Chronicle* of May 9, 1874. had this to say in an editorial on the subject:

> "...Were it possible to keep the River open — and in an age of improvement it may be reasonably supposed that such a consummation is attainable — a ferriage system at least as economical as cartage at present might be adopted, and the annoyance and loss which has now to be yearly submitted to, be avoided. Perhaps by the construction of a powerful iron ram to be used solely for bridge smashing purposes, we might be able to do away with a supposed inconvenience which makes itself felt as a disastrous nuisance and means of communication which eventually isolates."

In fact it was not until the coming of the icebreakers *Montcalm, Champlain* and *Lady Grey* in the period 1904-6 that the first serious efforts were made to conduct flood prevention operations by systematic icebreaking. Today the Great Ice Shove is but a memory; at the time of the *Napoleon* disaster, and for years to come, it was a nightmare for those with vessels or shoreline property on the St. Lawrence.

A PLANE IS DOWN

The Aircraft Accident Investigation Division of the Ministry of Transport has been called on to investigate aircraft accidents in the worst of circumstances, but two members of the division last spring set what will likely remain a long-time record when they conducted an investigation into an incident within 300 miles of the North Pole.

Investigators Reid Glenn and Bob Phillips spent two days aboard four different types of aircraft to reach the site where an American C130 Hercules had crashed while landing on T3 Ice Island, sometimes called Fletcher's Island, 75 miles off the northwest of Ellesmere Island, 300 miles south of the North Pole, and 3,500 nautical miles from Ottawa, where the accident team was based.

The Hercules was landing on T3 to resupply a research base operated by the University of Alaska under a grant from the United States Navy. The purpose of the base is to perform research of the Arctic sea and ice in extreme cold temperatures. But since the island was in Canadian territorial waters, it was decided after consultation with the Department of External Affairs and The Royal Canadian Mounted Police that a Canadian aircraft investigation team should be dispatched.

The team departed from Ottawa for Toronto in a MOT Beech B80 Queen Aire, then went on to Edmonton in an Air Canada DC8, where they transferred to a Pacific Western Airlines Boeing 727 for a flight to Resolute Bay. A R.C.M.P. Twin Otter was waiting at Resolute for the final leg to T3. At one stage it appeared part of the trip would have to be undertaken by dogsled.

Investigators Glenn and Phillips arrived at the crash site approximately 48 hours after the accident was first reported to Ottawa. Their arrival had to be timed to coincide with the one hour of twilight available at that period of the year.

But the biggest obstacle was the cold. The temperature when they alighted was -56 degrees. Luckily there was no wind. Scientists have determined that exposed flesh freezes when there's a chill factor of 50 degrees below zero so the investigators took no chances and relied on the R.C.M.P. for expert advice on working in the cold.

Because of the extreme cold it was impossible to keep the investigation team's cameras serviceable. Photographs are a most important part of an investigating team's work. Even though the cameras were kept inside parkas they were frozen within minutes so the team

was able to get only about a dozen photographs.

The team found the Hercules at the end of the runway on the island where it had crashed after landing. The plane had been on a regular supply run bringing mail, food and supplies to the base which, because it was on a floating ice island, could drift up to 40 miles a day. The runway headings vary as the island shifts, and compasses are all but useless so close to the North Pole. The investigators concluded the rough strip had been the cause of severe wing damage to the Hercules after it had safely touched down. There were no injuries to the crew.

The team was able to complete its investigation quickly and flew off the island on the R.C.M.P. Twin Otter while enough twilight remained. After returning to Resolute Bay for an R.C.M.P. inspection, the team returned to Ottawa by way of Frobisher and Montreal.

But our story does not end here. What became of the huge Hercules with smashed wings at the end of an icy runway within 300 miles of the North Pole?

The plane was put up for auction by the insurance company, Lloyd's of London, as partial settlement. Alaska International Air bought the remains for $68,500 for salvage of its useable parts. The plane when new sold for $2.4 million. A new Hercules today sells for $6 million. The airline's engineers surveyed the wreck and decided to rebuild the plane on the spot and try to fly it out.

Crews spent months in Arctic slush and cold re-attaching the wings and repairing the midsection of the giant Hercules, which can carry a cargo of 20 tons. When they had completed the task, the plane was towed through 30-foot drifts to the runway, where it took off for Alaska and further repairs.

This is just one story of the work of the Aircraft Accident Investigation Division of the Ministry of Transport. Some, like this one, have happy endings. Many others do not.

But 24 hours a day anywhere in Canada, the Division is ready to perform its function — probing accident causes, and letting these accidents illustrate to fliers how to avoid similar incidents in the future.



Investigators from the Air Accident Investigation Division were ferried to the crash site by a R.C.M.P. Twin Otter, seen being fueled here at Eureka in 50-below-zero temperatures.



Alaska International Air was using a leased C130 Hercules to ferry supplies to Arctic bases. The Hercules was damaged while landing on an island 300 miles south of the North Pole and Ministry of Transport investigators were dispatched to the scene.





Anniversary

The first TRANSPORT CANADA appeared six years ago this issue, January-February 1968. Up to that time the Ministry's staff publication had been called, "News on the DOT". There have been several changes since then, and there will be several more over the years to come.



Anniversaire

L'édition de Transport Canada, numéro de janvier-février 1968, constituait une nouvelle page dans l'histoire de la revue des employés du ministère des Transports. Auparavant, cette revue portait le nom de "News on the DOT". Au cours des années, nos lecteurs auront remarqué plusieurs améliorations à cette revue et d'autres seraient à prévoir dans un avenir prochain.

Ottawa-Montréal en 75 min.

par M. Gary G. Vogan
Président d'Airtransit Canada

Le gouvernement canadien confiait en mai 1971 au ministère des Transports le soin d'entreprendre la planification, la mise en oeuvre et l'appréciation d'un service de démonstration de transport aérien par ADAC. Ce projet amène la fondation d'une petite compagnie aérienne qui exploitera un service passagers entre Montréal et Ottawa en utilisant des avions à décollage et atterrissage courts (les de Havilland "Twin Otter"). Air Canada assurera l'exploitation de ce service par l'entremise d'une filiale connue sous le nom "Airtransit Canada" qui devint la première compagnie aérienne ADAC.

Deux objectifs fondamentaux sont à la base de la création par Airtransit d'un service de démonstration ADAC: faire connaître et améliorer le service de transport interurbain à courte distance mis au point par le Canada et stimuler l'intérêt mondial en vue de la commercialisation des systèmes ADAC complets, pour lesquels le Canada a déjà acquis une réputation internationale.

Bien que les ADAC soient déjà utilisés tous les jours dans plusieurs parties du monde, on ne leur a pas jusqu'ici fait donner toute la mesure de leurs possibilités en conformité des normes de sécurité comparables à celles qui s'appliquent aux aéronefs de transport civil gros porteurs. Quelles que soient les applications envisagées pour les ADAC, il faudra toujours tenir compte des intéressantes caractéristiques suivantes: ce sont des avions silencieux pouvant décoller et atterrir sur courtes distances et sous forte pente, et ils sont certifiés en conformité des normes de transport aérien international

Critères respectés

Le choix de la route comme service de démonstration et dont l'inauguration est prévue pour ce printemps, devait tenir compte des critères suivants.

1 — une longueur de parcours adaptée aux possiblités du "Twin Otter".

2 — la possibilité d'une clientèle justifiant l'établissement d'un tel service,

3 — des emplacements pour la construction d'adacports facilement accessibles au public,

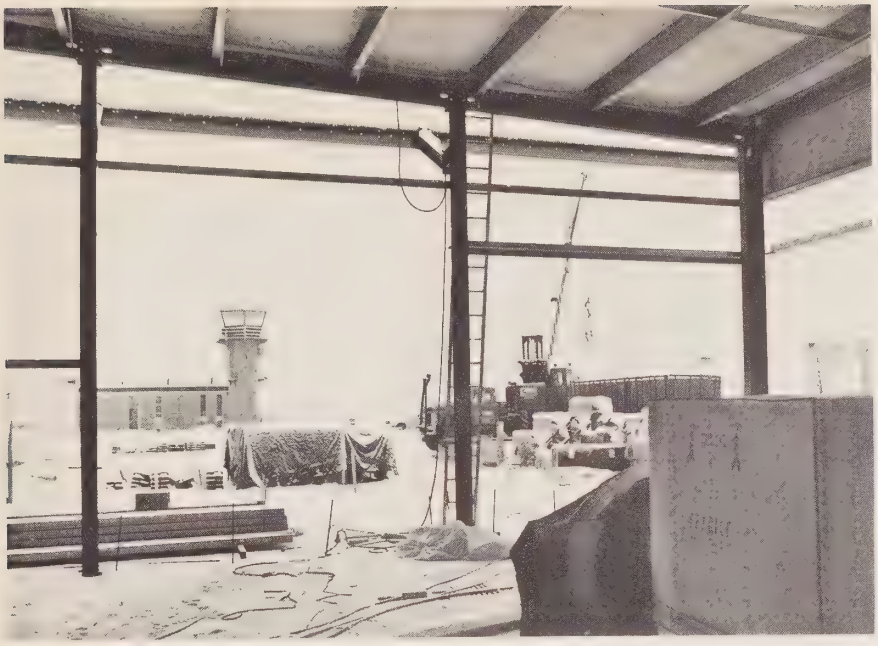
4 — des adacports situés à l'extérieur ou à une certaine distance des aéroports classiques afin que le voyageur soit en mesure de choisir le mode de transport aérien qu'il désire utiliser,

5 — une concurrence des autres modes de transport aérien ou de surface,

6 — un itinéraire choisi, susceptible d'attirer l'atten-



Les travaux de construction de l'adacport de Montréal vont bon train. Le centre-ville de la métropole que l'on peut voir à l'arrière-plan illustre bien la proximité de l'adacport du coeur de Montréal



La construction de la tour de contrôle et de l'aérogare à l'adacport d'Ottawa sera bientôt terminée.

tion du marché international tout entier et,

7 — une activité aérienne suffisante pour permettre la mise à l'essai des installations et procédures de contrôle de la circulation aérienne.

L'itinéraire Ottawa-Montréal répond à chacun de ces critères. Selon certaines études du marché, il appert que le service ADAC pourrait attirer annuellement environ 90 000 à 120 000 passagers pour ce voyage qui convient à un aéronef de la classe du "Twin Otter". Dans chacune des deux villes, des emplacements, l'un à Rockcliffe et l'autre au parc de stationnement Victoria, tous deux appartenant au gouvernement, satisfaisaient aux critères de base pour la construction d'adacports. Tous deux sont assez éloignés des autres aéroports existants mais par contre à proximité des centres d'affaires: l'adacport de Montréal n'est qu'à cinq minutes de distance du centre ville tandis que celui d'Ottawa est à environ 15 minutes du Château Laurier.

Il y a une vive concurrence de la part des services de chemins de fer, d'autobus et des autres services de transport aérien, car cet itinéraire relie la capitale nationale à l'un des grands centres urbains du Canada, assurant ainsi les débouchés sur un marché composé d'hommes d'affaires, de fonctionnaires, d'hommes politiques des gouvernements fédéral et provinciaux ainsi que du grand public. En outre, chacun des adacports est situé à l'intérieur d'une région de contrôle terminale d'un grand aéroport de type classique, de sorte qu'il est possible de vérifier si les procédures de contrôle de la circulation aérienne utilisées pour les ADAC sont compatibles avec le volume important de trafic des avions classiques.

Exigences techniques

Les travaux de planification sont maintenant terminés et lorsque le service sera mis en exploitation, six de Havilland "Twin Otter" d'une capacité de 11 passagers, effectueront quotidiennement des vols réguliers. Ces envolées se feront au rythme d'un avion toutes les heures de 7h à 23h, avec des vols supplémentaires pendant les périodes de pointe, le matin, l'après-midi et le soir.

Les de Havilland "Twin Otter", utilisés pour le service de démonstration, sont désignés par le DHC-6-300S. Dans cette désignation, le S indique les nombreuses modifications apportées aux appareils ordinaires de la série 300 par le ministère des Transports et l'équipe d'Airtransit, dans le but de les adapter au véritable environnement ADAC.

Une addition très importante à l'avion de base est l'installation d'un ensemble d'avionique très perfectionné. Ce genre de système est considéré comme absolument essentiel pour le genre d'exploitation selon les règles de vol aux instruments (IFR) envisagées dans le cas de ce service ADAC reliant un centre ville à l'autre, à proximité des voies de circulation des avions classiques.

L'équipement se compose des éléments habituellement requis pour les vols de transport public en régime IFR, notamment deux récepteurs VOR, deux VHF, un radiocompas, un transpondeur pour identification par le contrôle de la circulation aérienne et deux dispositifs de mesure de distance à affichage numérique en plus de deux directeurs de vol Collins 109 modifiés, un matériel de navigation à couverture de surface (R-NAV), deux systèmes d'atterrissage aux instruments à hyperfréquences (MLS), une radiosonde, un radar météo, un pilote automatique et un enregistreur de vol. Afin de pouvoir recueillir le plus grand nombre possible de données au cours du service de démonstration, chaque avion a été équipé d'un système d'acquisition de données de vol (ADAC).

Trajet de raccourci

L'itinéraire Montréal — Ottawa

traversera la zone de contrôle de Montréal directement à la verticale de l'aéroport international. La navigation à couverture de surface permettra de voler fréquemment dans l'espace aérien réglementé et devrait permettre également d'apporter quelques modifications aux méthodes de contrôle traditionnelles. Le matériel R-NAV peut être programmé par un lecteur de cartes pour emmagasiner jusqu'à 40 points de cheminement tridimensionnels. Le profil de vol entier peut être programmé avant le décollage pour comprendre notamment les SID (départ standard aux instruments), les voies aériennes en route, les STAR (itinéraire standard d'arrivée en région terminale), l'approche R-NAV et l'approche manquée.

Un vol type recevra une autorisation de vol IFR par l'intermédiaire d'un des plans de vol programmés par l'introduction d'une carte voulue dans l'ordinateur R-NAV. En suivant les signaux de commande sur son directeur de vol, le pilote pourra maintenir le profil. S'il y a un changement quelconque dans les procédures d'approche programmées, à l'approche de la région terminale, on informera le pilote de la piste à utiliser pour l'atterrissage et de l'itinéraire correspondant d'arrivée en région terminale. Ici encore, la carte appropriée sera introduite dans l'ordinateur pour obtenir le profil voulu. Le contrôle de la circulation se contentera de surveiller le vol pour s'assurer de l'espacement.

Le profil R-NAV mènera le vol jusqu'à l'amorce de l'approche, après quoi une approche MLS pourra être effectuée, avec pente accentuée d'alignement de descente (de l'ordre de 6 à 7 1/2 degrés). Pendant l'approche, les données brutes R-NAV (alignement de descente et azimut) seront affichées sur un indicateur séparé afin de confirmer les données du MLS et d'assurer le guidage en cas d'approche manquée.



Six des Twin Otter qui feront la navette entre Ottawa et Montréal dans le cadre du service expérimental ADAC.

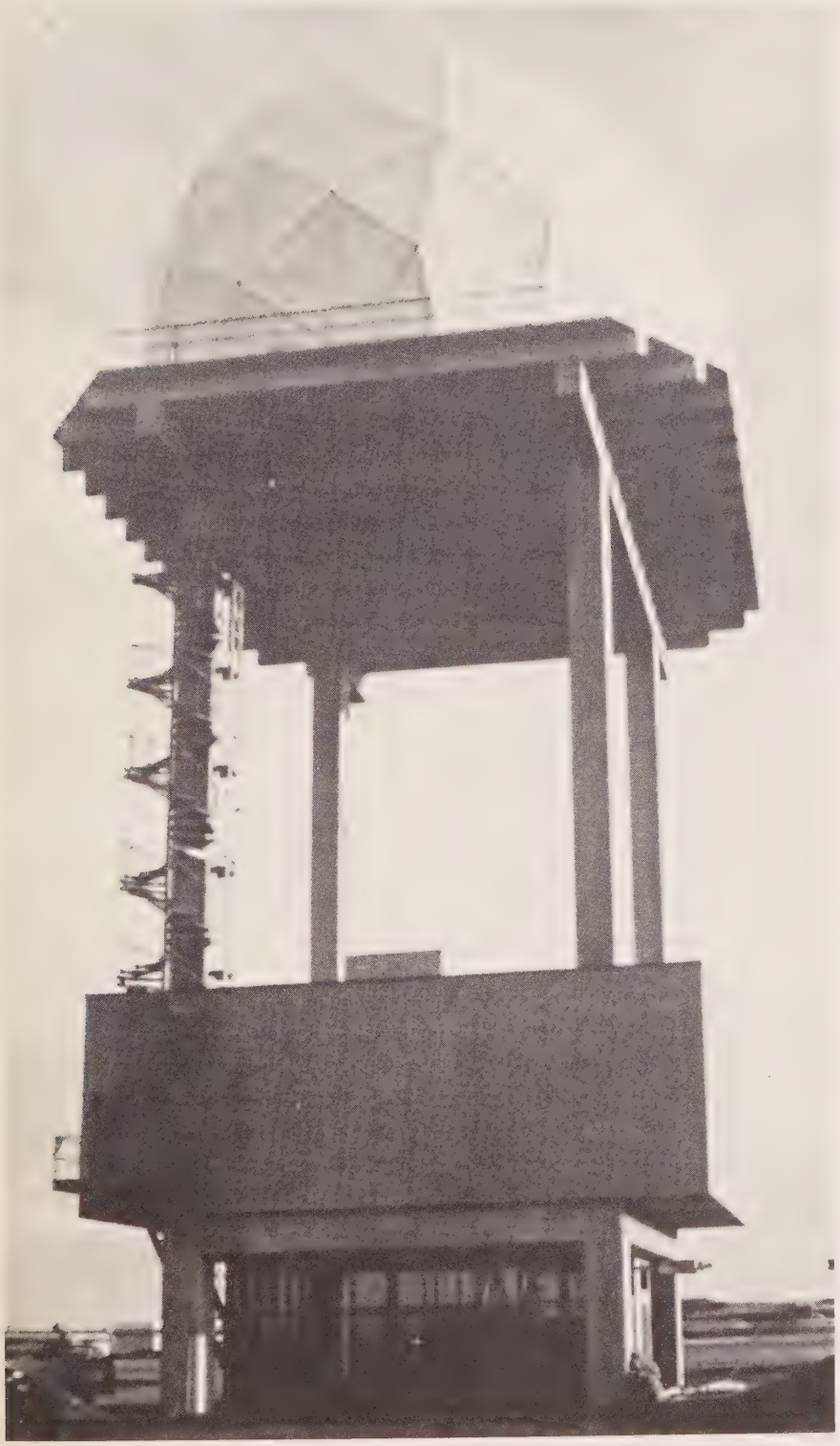
Bien que les ADAC soient de façon générale moins rapides que les avions classiques, la durée totale de vol d'un ADAC peut être considérablement réduite à cause de la plus grande vitesse d'accès au sol. Par exemple, le voyage effectué par un avion classique entre Ottawa et Montréal aura une durée de 30 minutes de plus que celui exigé par l'ADAC.

Un regard sur l'avenir

Le nombre de voyageurs aériens en Amérique du Nord augmente au rythme d'environ de 10 pour cent par année, ce qui représente un problème énorme pour les aéroports conventionnels. En outre, malgré les dimensions de plus en plus gigantesques des avions de transport modernes, l'activité aérienne dans le voisinage des grands aéroports augmente à un point tel que la capacité des aéroports commence à être limitée à certains endroits en raison de la congestion de la circulation. Le transport par ADAC peut être considéré comme une solution à ce problème, sous deux aspects différents: d'abord, en confiant les trajets à courte distance aux adacports, et en aménageant des pistes ADAC aux aéroports conventionnels, mettant ainsi à profit les qualités de manoeuvrabilité et autres caractéristiques propres aux ADAC.

Dans plusieurs domaines, le Canada tirera de grands avantages de l'adoption des systèmes de transport ADAC. Sur le plan de l'environnement, l'ADAC assure une diminution notable de la pollution par le bruit et une utilisation plus efficace des terrains par rapport au transport aérien classique. Du point de vue de l'usager, le voyage coûtera moins cher et sera plus court. Quant à l'exploitant, ses frais seront moins élevés étant donné l'importance moindre des investissements nécessaires pour les terrains ainsi que des frais d'entretien.

seeing better electronically



To many it may appear to be a giant golf ball on a tee, but this new RADAR facility at Vancouver International Aiport is the latest advance in the Ministry of Transport's air traffic control system.

by R.H. Bulbrook

Telecommunications and Electronics

(Air) Branch

RADAR is an accepted household word today, but how many of us are aware that it is an acronym for Radio Detecting And Ranging? To confuse the issue, the word RADAR is associated with specialized equipment and we now hear of terms such as Secondary RADAR, Primary RADAR, Airport Surveillance RADAR, Primary Terminal RADAR and Primary Enroute RADAR.

The term "Primary" associated with the various types of RADAR reflects what most of us think RADAR to be--a series of signals transmitted, hitting a target, reflecting back and being displayed on a screen. Secondary RADAR is a transponder, which in layman terms is a special form of RADAR by which aircraft transmit replies in response to an interrogation signal sent from the ground. Secondary Surveillance RADAR (SSR) is normally operated in association with a primary RADAR system which not only locates an aircraft but through secondary radar, can also identify it. SSR is used to supplement primary RADAR as it facilitates identification of aircraft. It also provides altitude information and through coded signals facilitates the detection of aircraft experiencing emergency or communications failure.

Primary Terminal Radar controls arriving, departing and overflying aircraft operating in the vicinity of an airport. As air traffic enters an airport's designated area, Terminal Control using the terminal control RADAR, will guide aircraft to their proper runway, direct them to a holding position until traffic is cleared sufficiently for an approach, or in the case of overflights, will guide them through the terminal area to ensure safe passage through local traffic.

The main difference between Terminal and Primary RADAR is in the range covered, with Primary Enroute normally being the longer range. At medium and small airports, however, the Terminal RADAR is the same equipment as the Enroute RADAR. This Short Range Terminal RADAR is advantageous, permitting aircraft targets to be detected closer to the antenna than Enroute Radar and providing faster updating of the radar information for controlling aircraft taking off and landing.

Appearing on the Canadian landscape now are the new Airport Surveillance RADAR Systems (ASR-803) with antennas encased in a Radome which sits atop the transmitter building and power plant.

The purpose of an Airport Surveillance Radar is to give the air traffic controllers at an airport a complete display of aircraft within their jurisdiction, including those which are approaching, landing and taking off.

The Airport Surveillance Radar, a primary radar, has the inherent disadvantage of displaying other objects and vehicles on the ground as well as the aircraft to the controller. The resulting "clutter" tends to distract the user and quite often obscures the wanted targets.

In looking for a primary radar system that will best suit MOT, the Air Administration is continually researching systems that will give a better ratio between target and clutter to enhance the operational display. Working to a specification of MOT, a modern solid state radar system known as the ASR-803 has evolved. Designed to minimize clutter and maximize the wanted signal, it incorporates many techniques to achieve this objective.

The ASR-803 is of solid state design practically throughout. It displays ranges to a maximum of 80 nautical miles, and gives the best possible ratio between target and clutter.

The radar tower and building for the ASR-807 has been completed at Vancouver and is an interesting new design of pre-formed reinforced concrete. The two-storey base of the tower houses the radar equipment and the uninterruptible power equipment. Adequate space is provided in the design for installation of a dual-channel primary radar (ASR-803) and a dual-channel secondary surveillance radar(SSR). The top of the radar tower platform is 75 feet above ground level and the radome is 55 feet in diameter and has the appearance of a giant golf ball on a tee.

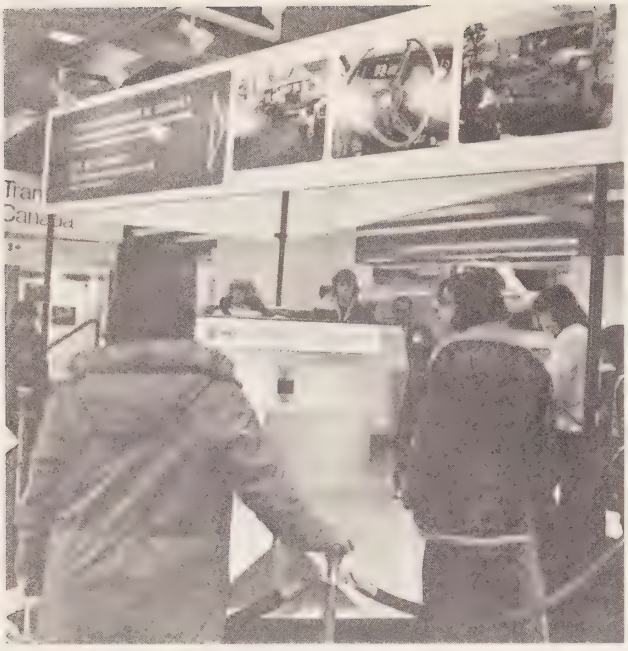
The Ministry of Transport will receive delivery of four new ASR-803's this summer. The first, to be delivered in March, will be installed in the existing facilities at Vancouver International Airport, where extensive evaluation of its performance in an operational environment will be made.

transcan/mini·reportages



Canadian Coast Guard icebreaker N.B. Maclean *at work in the St. Lawrence River above Quebec City. Photo by Gordon Thomas, MOT.*

Le N.B. Maclean, navire de la Garde côtière canadienne, est à l'oeuvre sur le Saint-Laurent, près de la ville de Québec. Photo de Gordon Thomas du ministère des Transports.





montreal auto salon

"A five-mile-an-hour crash? I won't even feel it." This was a typical reaction to the MOT's popular "seat-belt convincer" on display at AUTO '74, at Place Bonaventure in Montreal early in January. However, such skepticism soon gave way to an expression of shocked surprise when the visitor was strapped in to the "convincer" and went for a ride.

The device is really a car seat mounted on a sloped track. When two passengers are belted in beside the unbelted child-sized doll the seat is released, and begins its descent to the barrier at the bottom. At the end of the six-foot trip, the seat and its passengers are travelling at about five miles an hour....the speed of many a rear end collision.

The sudden stop gives a pretty good jolt, and the doll slams against the dashboard. Even the most blasé observer goes away shaking his head and thinking a little more seriously about seat belts. And this is the object of the exercise.



suggestion awards

prime à l'initiative

Phillip Lester of Ottawa received an award of $265 for suggesting revisions for certification of invoices in the Telecommunications Laboratory in Ottawa.

M. Phillip Lester, d'Ottawa, s'est vu remettre la somme de $265. pour avoir suggéré certaines modifications dans le système de vérification des factures au Laboratoire des Télécommunications à Ottawa.

Douglas McDonnell of Ottawa received $200 for suggesting revisions for employees' travel arrangements through the Central Travel Service.

M. Douglas McDonnell, d'Ottawa, a reçu $200. pour avoir soumis au Service central de voyage des idées devant permettre une certaine amélioration dans la préparation des déplacements des employés.

Mr. Edgar Leblanc, Ottawa, Ont., $100.00 and $90.00

Mr. Gordon Cudlipp, Winnipeg, Man., $90.00 and $40.00

Mr. Karol Bilyj, Ottawa, Ont., $90.00

Mr. H.D. Mossman, Halifax, N.S., $90.00

Mr. Ross Moffett, Ottawa Ont., $65.00

Miss Marriette Ducharme, Ottawa, Ont., $60.00

Mr. R.L. Manning, Victoria, B.C., $50.00

Mr. Terrance Mains, Saskatoon, Sask., $50.00

Mr. R.H. Mitchell, Comox, B.C., $50.00

Mr. J.A. Hill, Prince George, B.C., $50.00

Mr. R.G. Aude, Aurora, Ont., $45.00

Mrs. Jane Anne Rogers, Toronto, Ont., $45.00

Mr. D.I. Clark, Richmond, B.C., $40.00

Miss Madeleine Blier, Montreal, P.Q., $40.00

Mr. Stuart Munro, Ottawa, Ont., $30.00

retirements retraites

George Smith of the Marine Aids Division presents Melvin Miller with a certificate of appreciation to mark his retirement as Mrs. Miller looks on. Mr. Miller was with the Civil Service for 35 years.

M. George Smith, de la Direction des aides à la navigation, présente à M. Melvin Miller à l'occasion de sa retraite un certificat de reconnaissance. M. Miller, qui est ici accompagné de son épouse, a été à l'emploi de la Fonction publique pendant 35 ans.





R.J.D. Brown, Director of Materiel Management, congratulates Gordon Donnelly as Mrs. Donnelly looks on. Mr. Donnelly recently retired after 32 years in the Civil Service. He spent most of his career with the Contracts and Purchase Division of the Ministry of Transport, which later became Materiel Management.

En présence de son épouse, M Gordon Donnelly reçoit à l'occasion de sa retraite les félicitations de M. R.J.D. Brown, directeur de la gestion du matériel. Trente-deux ans à l'emploi de la Fonction publique, M. Donnelly a passé la majeure partie de ces années au service de l'ancienne Direction du Ministère, chargée des achats et des contrats.

George T. Milne retired recently after 35 years in the public service. Since 1953, he has been the Air Administration's expert on Airport Zoning Regulations. Mr. Milne was honoured at a retirement luncheon in Ottawa where he was presented with a gift from friends and fellow employees.

Berkley Hennessy, financial and administrative officer for the Ministry's STOL project team, retired recently after 34 years with MOT. Mr. Hennessy served as an accountant with the Air Administration and as a program administration officer in airport operations.

A.O. Lepisto, station manager at Sioux Lookout Aeradio, was presented with a certificate of appreciation from the Prime Minister on his retirement after 33 years with the Ministry of Transport.

M. George T. Milne a récemment pris sa retraite après 35 années au service de la Fonction publique. Il était, depuis 1953, l'expert de l'Administration des transports aériens en matière de règlements de zonage aux aéroports. À l'occasion d'un dîner d'adieu qui s'est tenu à Ottawa, M. Milne a reçu un cadeau de la part de ses collègues et amis.

M. Berkley Hennessey, agent des finances et de l'administration de l'équipe du projet ADAC du Ministère, a pris sa retraite après 34 ans au service du ministère des Transports. M. Hennessey a travaillé comme comptable à l'Administration canadienne des transports aériens et comme agent d'administration des programmes à la Division de l'exploitation des aéroports.

M. A.O. Lepisto, directeur de la station radioaéronautique de Sioux Lookout, a reçu un certificat d'appréciation du PREMIER Ministre lorsqu'il a pris sa retraite, après 33 ans au service du ministère des Transports.



THERE'S NOTHING NEW ABOUT THE ENERGY CRISIS ALBERT HAS HAD HIS FOR YEARS.

C'EST RIEN DE NOUVEAU — LA CRISE D'ÉNERGIE ALBERT S'Y CONNAIT DEPUIS DES ANNÉES.

Captain Lawson Thomas, right, ended 50 years service at sea when he recently retired as Shipping Master for the Ministry in the Port of Halifax. Mrs. Thomas looks on as Frank Weston (right), Marine Services Regional Director congratulates Captain Thomas after presenting him with a gift. (Clary Roberts photo).

Le capitaine Lawson Thomas, à droite, a récemment pris sa retraite après 50 ans de service en qualité de commissaire maritime au port d'Halifax. Sur notre photo, Frank Weston (à droite), directeur régional des Services de la marine, félicite le capitaine Thomas après lui avoir présenté un cadeau, au cours d'une cérémonie à laquelle Mme Thomas était présente.





William (Bill) Calladine, Superintendent, Ports Administration, receives the Prime Minister's commendation on completion of 35 years' federal service from J.H.W. Cavey, Chief, Harbours and Ports at a reception to honour him on his retirement. Mr. Calladine joined Transport's Aids to Navigation in 1949 and entered the Harbours Division on its formation in 1960.

Prenant sa retraite après 35 ans de service au gouvernement fédéral, M. William (Bill) Calladine, surintendant de l'administration des ports, reçoit un certificat signé du Premier ministre, des mains de M. J.H.W. Cavey, chef des havres et ports, au cours d'une réception offerte en son honneur. M. Calladine est entré au ministère des Transports (aides à la navigation) en 1949 et travaillait à la Division des havres et ports depuis sa création en 1960.

Transport Minister Jean Marchand tried his hand at operating a mechanical auger as part of the sod-turning ceremony for a new terminal building at Saskatoon Airport. The $3.9 million air terminal is expected to handle 375,000 passengers a year in 1978.

Le ministre des Transports, Monsieur Jean Marchand, préside ici la cérémonie marquant le début des travaux de construction de la nouvelle aérogare de Saskatoon. Environ 375 000 passagers devraient bénéficier en 1978 de cette aérogare dont le coût s'élèvera à $3.9 millions.





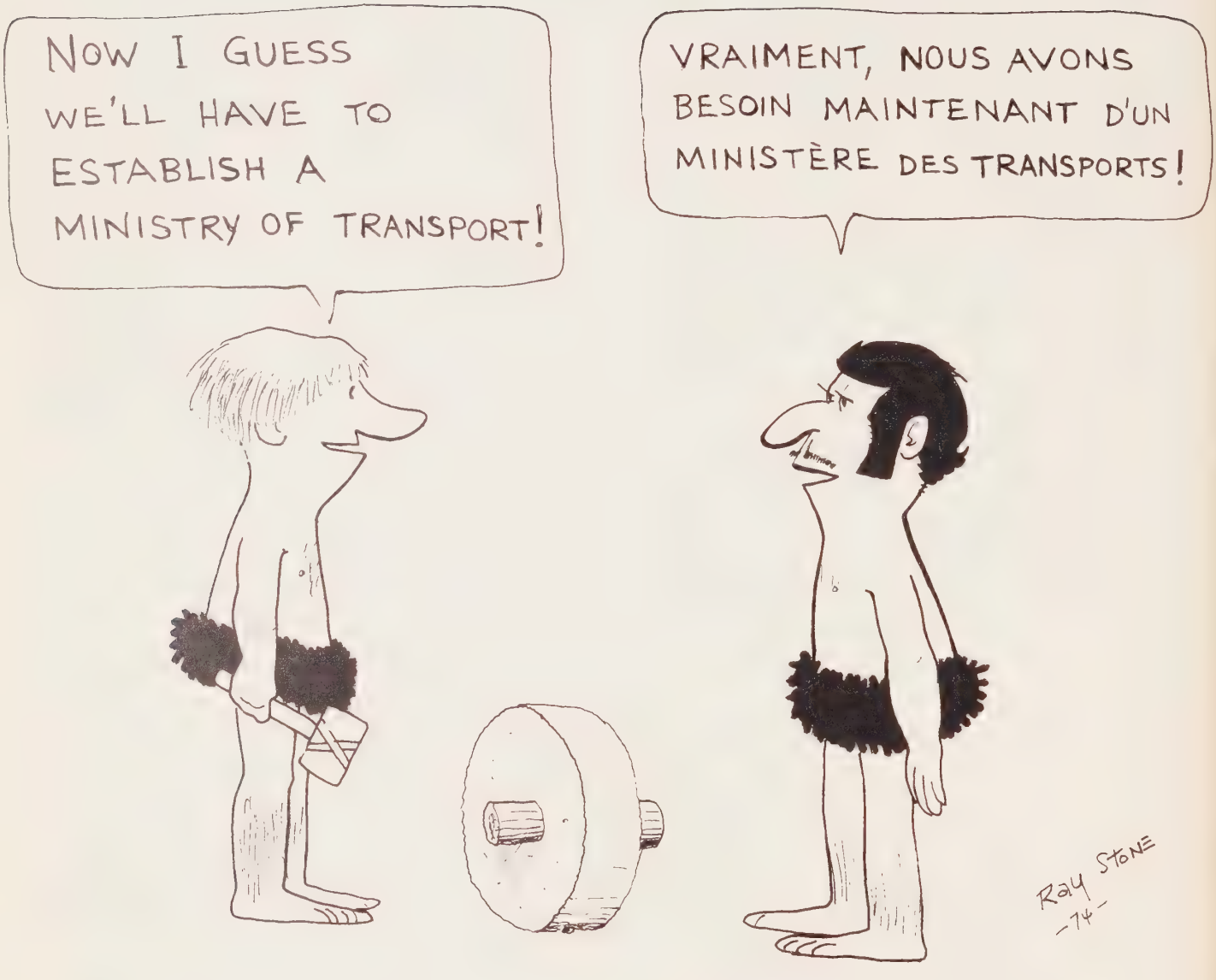
Peter Aykroyd has been appointed Deputy Chairman of the Transport Development Agency in Montreal. Mr. Aykroyd has served as Acting Secretary to the Cabinet in the Privy Concil Office since 1967.

Le nouveau directeur adjoint du Centre de développement des transports (Montréal) est Monsieur Peter Aykroyd. Depuis 1967, il occupait le poste de secrétaire intérimaire du Cabinet au Bureau du Premier ministre.



Airport Fire Chiefs Gilles Fanslau and Harold Stewart (right) congratulate each other following presentation of fire prevention awards by Air Administrator W.H. Huck. The award given for airport fire prevention safety was won by Vancouver International Airport, represented by Mr. Fanslau in 1971, and by Moncton Airport in 1972, represented by Mr. Stewart.

Les responsables de la prévention des incendies aux aéroports de Vancouver et de Moncton, MM. Gilles Fanslau et Harold Stewart (à droite), se félicitent mutuellement après la présentation d'un certificat par M. W.H. Huck, administrateur des transports aériens. Ce certificat, remis aux autorités aéroportuaires qui ont fait un excellent travail dans le domaine de la prévention, a été décerné à Vancouver en 1971 et à Moncton en 1972.


NOW I GUESS WE'LL HAVE TO ESTABLISH A MINISTRY OF TRANSPORT!
VRAIMENT, NOUS AVONS BESOIN MAINTENANT D'UN MINISTÈRE DES TRANSPORTS!
RAY STONE
-74-



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Serge Theoret of the Canadian Coast Guard administers first aid during a simulated rescue — part of a six-week course conducted in Vancouver to qualify Hovercraft First Officers.

Cover photo by Gordon Thomas

Photo Couverture de Gordon Thomas

M. Serge Théoret, de la Garde Cotière Canadienne, prodigue les premiers soins lors d'un exercice de sauvetage. Cet exercice fait partie d'un cours de six (6) semaines donné à Vancouver aux officiers en chef. qualifiés dans l'opération des aéroglisseurs.

CONTENTS/SOMMAIRE

Transportation Council Message
Message du Conseil des Transports 2

Mission Oil 4

Going Metric 7

Si, Si, Si 9

Six Railwaymen in Search of the Russian Winter 12

Search and Rescue 15

Rescue from the Cliffs 18

National Transportation Week 19

A Filing Revolution 20

Keeping Track 22

Reorganization for T & E 24

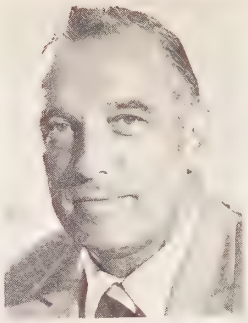
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Hon. Jean Marchand


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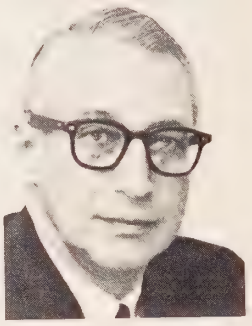

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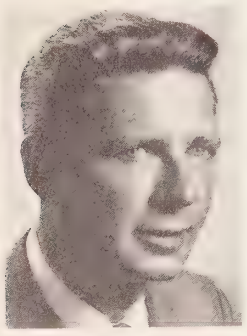

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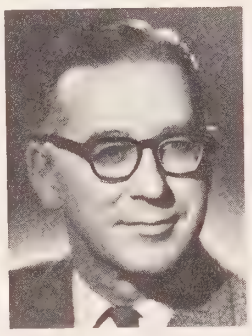

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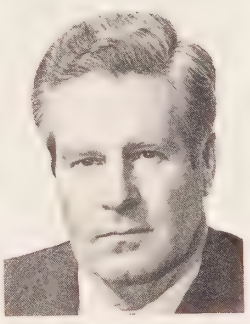

Mel Hagglund

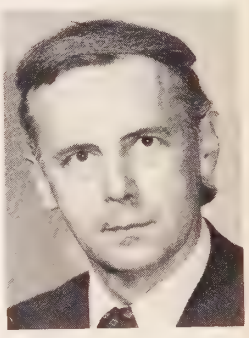

W.H. Huck

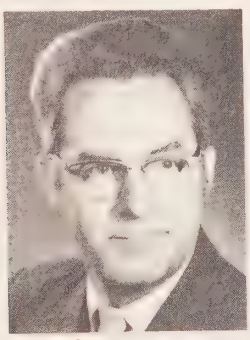

Robert Turner

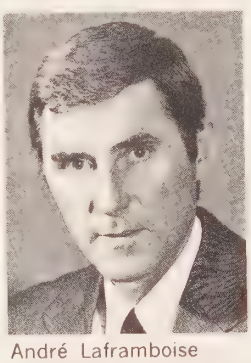

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Lucie Dion


M.D. Armstrong

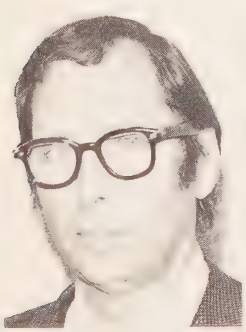

Roy Illing

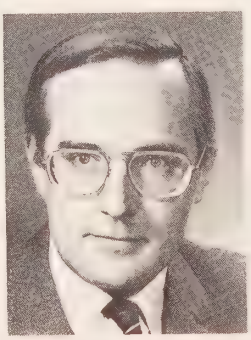

John Gray


André Laframboise


J.M. Davey


J.Y. Clarke


W.F. Nelson


M.E. Butler


Guy Lavigueur


Del Taylor

message

While many advances in recent years have been accomplished in surface transportation in Canada, in my new duties as Surface Transportation Administrator I see as many and more exciting challenges facing us now and in the future. The need for more efficient people-moving systems and for better ways of moving vital commodities throughout this country has focused public attention on the requirement for fast, reliable and safe ground transportation systems — and the energy shortage of recent months has spotlighted this need more than ever.

Dial-A-Bus demonstration services have proved successful. An improved relationship has developed with CN with respect to East Coast Ferries, and studies have shown that vessels and terminal facilities need improving to cope with the expanding traffic. Emphasis has been placed on motor vehicle and traffic safety. Agreement in principle has been reached with British Columbia using CN and BCR as agents, to extend the rail network into northern B.C. These are some of the achievements, but the challenges which lie ahead are even more exciting.

Upgrading of rail services, development of modern urban transit systems, highway improvement and better all-around services to remote areas are a few of the problems that have to be tackled in collaboration with other departments and other levels of government.

FP-COWT (The Federal/Provincial Committee on Western Transportation) which evolved from the Western Economic Opportunities Conference last year, is attempting to break new ground in terms of federal/provincial consultation by establishing new approaches which will provide more input into regional and national transportation problems. With its Eastern counterpart FP-CART (The Federal/Provincial Committee on Atlantic Region Transportation) it will soon be among abbreviations recognized throughout the transportation community.

Our goal is to continue to enhance the quality of life in all parts of Canada through transportation programs developed in cooperation with the provinces.

Depuis mon arrivée comme administrateur des transports de surface au ministère des Transports, j'ai été à même de constater que beaucoup avait été fait au cours des dernieres années. Cependant, il reste à l'heure actuelle de nombreux défis à relever, et il semble qu'il y en aura encore plus dans le futur. Le public peut maintenant réaliser la nécessité de l'établissement d'un système de transports de surface sur, rapide et efficace. Ce besoin se dégage, non seulement à la suite de la crise de l'énergie de ces derniers mois, mais aussi à cause du fait qu'il est impératif que nous soyons dotés de systèmes efficaces de transports, tant pour les individus que pour les marchandises, et ce à l'échelle nationale.

On peut remarquer parmi les réalisations les plus récentes, l'établissement dans la région de Toronto d'un service d'autobus à domicile. Le Canadien National, pour sa part, a entrepris d'améliorer son service de traversiers sur la côte Atlantique. Il a de plus mené à terme une étude révélant le besoin d'améliorer les navires et les installations portuaires afin de faire face à la demande croissante. Dans le domaine routier on s'est penché sur les problèmes de sécurité automobile et routière.

En Colombie Britannique une entente de principe a été conclue entre le Canadien National et la compagnie de chemins de fer de la Colombie Britannique, afin d'étendre vers le nord de la province le réseau actuel de chemins de fer.

On peut déjà prévoir qu'avec la coopération d'autres ministères, des gouvernements provinciaux et municipaux, nous pourrons bientôt apporter les améliorations nécessaires dans les services de chemins de fer et les réseaux routiers. Nous pourrons aussi développer de nouveaux moyens de transports urbains plus rapides et efficaces.

Le Comité fédéral-provincial sur le transport dans l'Ouest (CFPTO), né à la suite de la conférence sur les perspectives économiques de l'Ouest, et le Comité fédéral-provincial sur les transports dans l'Est (CFPTE), seront bientôt connus dans tout le monde des transports comme étant des mécanismes de première importance. Tous deux travaillent à améliorer la qualité de la vie à travers tout le Canada en favorisant le développement des programmes de transports par la coopération des deux grands paliers de gouvernements.



R. Aldwinckle

Robert Aldwinckle

mission oil

by Des Allard
Regional Public Affairs Officer
Pacific Region

The Ministry of Transport late last year announced the appointments of five regional marine emergency officers across Canada. They have been busy individuals since receiving their appiontments, as the following report on the west coast operation indicates.

Contrary to published reports, Ministry of Transport people called to the scene of the Erawan-Sun Diamond ship collision outside Vancouver Harbor on September 25, 1973 were not "masterminding the mop-up, in their pyjamas, in the spirit of Dunkirk."

Captain John C. "Ian" Young, Regional Marine Emergency Officer for the western region (which also includes territory north to Alaska and east to the Manitoba border) looks back on this incident and laughs.

But on the morning of Sept. 25 he wasn't in a jovial mood and wasn't in his pyjamas as he headed towards the spot where two huge freighters were locked together following a pre-dawn collision.

As luck would have it, Captain Young had been officially appointed to this new post just the day before. It wasn't his baptism of fire, by any means, but it wasn't an auspicious way to start off a new job.

Four days later, not having stepped off the British freighter Erawan since he was roused out of bed, Captain Young had the vessel towed by tugs into port. His estimated time of arrival out of the danger zone was right on time, give or take 20 seconds.



Ministry of Transport Regional Marine Emergency Officer Captain Ian Young was called upon during the second day of his new posting to supervise clean-up operations after a collision outside Vancouver Harbour involving the Sun Diamond and the Erawan. The severe hole in the Erawan's side was the escape route for tons of bunker oil and it took crews more than four days to complete the clean-up operation (Vancouver Sun photo)



During the operation, Captain Young was in the centre of a rough task. It was his responsibility to oversee the entire operation calling for separation of the bow of the Japanese freighter Sun Diamond from the midships section of the Erawan. The latter vessel had spilled tons of bunker oil from her ruptured tanks and the pollution problem practically on the doorstep of Vancouver became a matter of vital concern to everyone.

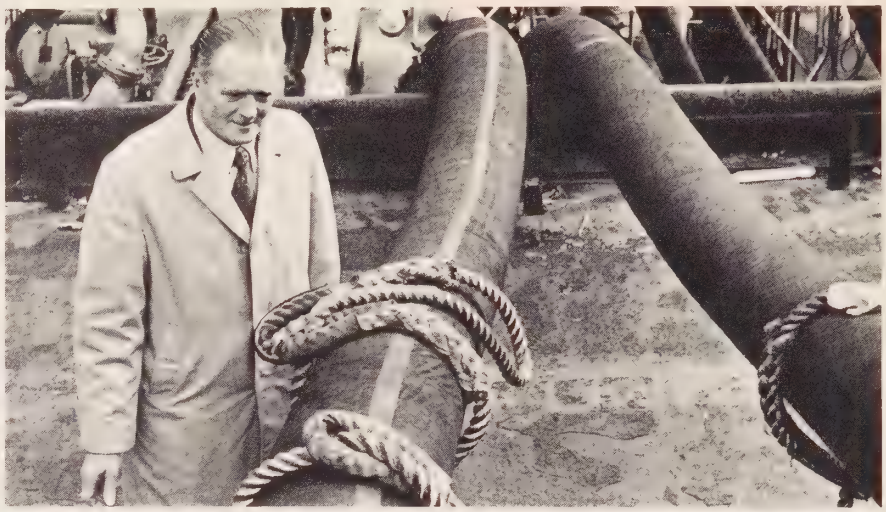
Control headquarters was set up at the Canadian Coast Guard base at Kitsilano and all the resources and people of the Ministry of Transport were called into play.

Coast Guard cutters patrolled the shore area, reporting on oil hitting the beaches. The CCG Hovercraft, with its greater speed, supplemented this work and served as a speedy surveillance platform for the department's marine surveyors when they were not conducting aerial surveys by helicopter. Regional Manager for Marine Regulations Norman Sigsworth headed the shore-based operation and coordinated the clean-up task with the municipalities affected. During the first and second days, Mr. Sigsworth was relieved by Regional Director Herb Buchanan who, in turn, was working closely with the Department of the Environment and many other agencies.

No one breathed easily during the entire four days because of the seriousness of the situation. And no one breathed a greater sigh of relief than Capt. Young, when the Erawan, a huge hole punched in her side intruding well below the water line, was finally berthed at Burrard Dry Docks on the north Shore.

Captain Young, a native of Kirkintilloch, eight miles from Glasgow, had no sooner tidied up the last problems associated with the Erawan-Sun Diamond incident when,

Captain Ian Young as part of his duties conducts regular inspection tours of ships in harbours under his jurisdiction.



on October 24, almost a month to the day later, another major oil spill occurred. This time, it was right in port when the German freighter Westfalia allowed a substantial amount of bunker fuel to pour into Vancouver Harbor. Another major pollution problem had to be tackled with a special urgency on the clean-up aspect of it.

For some reason which Captain Young is at a loss to explain, no major disasters occurred in December. However, on a beautiful, clear and sunny January 4th afternoon, a floating gasoline station on a barge in downtown Vancouver blew up with a tremendous roar. Three persons died in the blast and fire. It was another situation for Captain Young in his new role as Regional Marine Emergency Officer.

Working directly with Captain Roy Holland, Harbourmaster, Ministry of Transport personnel, including the crew of a Coast Guard cutter, were on the scene within minutes. The barge was a blazing inferno and gasoline drums were exploding one after the other, sending flames 100 feet or more into the air.

The crew of the tug, the Lawrence L., risked their lives getting a towline attached to the barge. The barge's supply of 65,000 gallons of gasoline and fuel oil could have erupted at any moment. Once the line was attached, Captain Young and Captain Holland had the barge, still billowing dense clouds of black smoke, beached on the north shore. Captain Young remained there until 5.30 a.m. the following morning. If the barge had not been hauled away, it could have drifted back towards shore where several other large fuel storage tanks were located, with disastrous results.

Captain Young's know-how acquired during incidents of this type, his experience as a ship's master and a marine steamship inspector, has been further advanced as the result of a trip to the British Isles late in January.

Along with the other recently appointed regional marine emergency officers, he visited the Royal Naval Salvage School at Rosyth on the Firth of Forth, then the oil pollution research laboratories outside London at Warren Springs to see the latest developments in oil pollution containment and recovery. From there the group journeyed to Milford Haven, the terminal for the supertankers, to see and gain experience in combatting oil spills during loading operations. All this experience is invaluable for the busy west coast of Canada.

GOING METRIC

One inch is the equivalent of 25.4 milimetres, one kilogram equals 2.205 pounds. Or was it 25.4 inches to a milimetre and 2.205 kilograms to the pound?

Sounds confusing! Soon all of us are going to be converting our units of measurement to the metric system which is already used by 90% of the world's population. North America is one of the few remaining holdouts still using the foot/pound system, but the Canadian government has set 1980 as the goal for conversion of Canada to the "Systems International (SI)" measurement system.





25° fahrenheit

25° celsius

Anyone who can divide or multiply by ten can use the metric system. Gone are the days of remembering how many ounces to the pound or square yards to the acre. But during the transition period, the problem will be in converting one's thinking from yards to metres, pounds to kilograms and so on.

"Education is the key", seems to be the slogan of the Ministry of Transport's Metric Conversion Group. Conversion to SI measurements will be a complicated and tricky process for MOT when considering the wide range of technology in the Ministry's operational and regulatory commitments.

The Ministry Metric Conversion Group has three prime functions: coordination of branches, agencies and divisions in their conversion efforts, informing employees and agencies working with MOT about conversion and encouraging all concerned to undertake the conversion process.

Metric conversion can be compared to a chain reaction. When one company, agency or government goes metric, it compels another body to convert, and then another, and then another and so on. The Ministry of Transport will begin its conversion early and in this way assume the initiative, rather than be driven by external forces.

Problems with conversion come from timing as much as anything else. An extended conversion time period has some advantages from an educational viewpoint over a quicker conversion, but is more time-consuming and costly in many respects. Some metric experts would prefer an almost immediate conversion but, because of the large number of affected activities, the government has agreed to conversion over a seven-year period.

When to convert a program or division to metric requires extensive analysis. Some situations will demand a speedy change while others need a more lengthy conversion.

For example, engineers in the Air Administration recently began experimental designs using SI measurements. Draftsmen immediately had a problem, since little of their equipment carried metric measurements. Another problem is that long-established construction terms such as "8-inch block" no longer apply. Conversion is no simple process.

In the province of Québec, road signs are already appearing in metric units, and in 1975, car instrument panels constructed in North America will show both the metric and foot/pound systems.

In the Marine Administration, tariff supercharge schedules of the St. Lawrence Seaway and National Harbours Board will require extensive study before converting to metric. Several pieces of legislation recently prepared for the Administration used metric units only.

TRANSPORT CANADA is also faced with its own problems of metric conversion. Beginning with this issue all measurements in the magazine will be carried in both metric and foot/pound units. Eventually the foot/pound measurements will be dropped entirely.

And the editors will still be trying to remember if it was 25.4 milimetres to the inch or 25.4 inches to the metre.



SI, SI, SI

par

Normand Héroux

Vous connaissez ce pays qui a une superficie totale de 9 976 177 Km^2 (Kilomètres), dont la distance du point le plus à l'est au point le plus à l'ouest est d'approximativement 6000 Km, dont le plus important fleuve de l'est a 1090 Km, et la plus importante voie d'eau de l'ouest 4000 Km. Où la température moyenne en janvier est de -10C et en juillet plus 20C?

Vous ne le connaissez pas? Alors celui-ci qui a une superficie de 3,851,809 $milles^2$, qui fait 3 500 milles d'est en ouest, dont le plus grand fleuve de l'est a 680 milles, et la plus longue voie d'eau de l'ouest 2 400 milles. Qui a une température moyenne en janvier de -15F, et de 70F en juillet.

...Mais c'est notre pays le Canada...

Voilà,...maintenant vous remarquez que les mesures employées sont différentes, et c'est ce qui fait qu'on ne s'y retrouve pas immédiatement. Ces mesures peu familières sont des mesures du système international. Avec ce système, milles deviennent Kilomètres; pieds, décimètres; pouces, centimètres; Fahrenheit se transforment en Centigrades, pintes deviennent litres, et livres font place à Kilogrammes.

Bientôt il n'y aura plus que mètres, kilomètres, grammes, kilogrammes, centimètres, litres, etc...

Actuellement le Groupe pour la conversion au système métrique de notre ministère prépare dans le grand plan d'ensemble du Groupe interministériel pour la conversion au système métrique, le passage du système impérial au système international.

Ce "nouveau" système que nous aurons existe depuis le 18e siècle. C'est en France qu'il apparut en 1795 (Larousse) en pleine période de révolution. Depuis ce temps, nombre de pays ont adopté avec force de loi le système métrique dont la France en 1840. En 1866, leTraité du Mètre reconnaît comme international le système français. En 1900 la majorité des nations européennes, et toute l'Amérique Latine utilisent le système métrique. En 1974, il n'y a que le Canada et les Etats-Unis qui n'y sont pas convertis. Au cours de la prochaine décennie, le monde entier sera au pas du SI, car le Canada a, en 1971, par un Livre Blanc, accepté l'adoption du système métrique. Aux U.S.A., on suit de près le Canada.



En plus de nous permettre de mieux nous entendre avec la communauté mondiale, le SI, par la conformité de ses divisions avec le système numérique décimal, simplifie de beaucoup nos calculs.

SI: AU MINISTERE DES TRANSPORTS

Le Comité fédéral interministériel pour la conversion au système métrique (CICSM) a fixé au Canada et aux groupes ministériels pour la Conversion au système métrique, quatre (4) grandes étapes d'application:

74: Point culminant de la période préliminaire d'étude.

74-75: Planification générale.

76: Elaboration d'un calendrier d'exécution.

77-80: Mise en oeuvre et application définitive du système.

L'avènement du système métrique au ministère des Transports comporte peut-être plus de difficultés que pour tout autre secteur, étant donné l'énorme volume de tâches qu'il assume.

Si on sait que le transport s'occupe des déplacements et que les déplacements se comptabilisent par des mesures, il faut se représenter que la disparition du système que nous utilisons depuis presque le début de notre histoire, ne sera pas une mince affaire. En effet, les mesures de poids, de distance, de capacité et de température ne seront plus les mêmes.

Les matériaux avec lesquels nous travaillons, les outils pour manipuler ces matériaux, les relations de poids, de mesure et de capacité vis-à-vis les coûts, changeront. Pour que le tout soit couronné de succès, il faut que les individus qui opèreront ces changements sachent exactement de quoi il s'agit. C'est ce qui fait, selon notre comité ministériel, (GSM) que la clé de la réussite c'est l'éducation.

Les hauts fonctionnaires du ministère des Transports, comme ceux des autres ministères, pourront dès cette année se familiariser avec le nouveau système à travers des sessions d'information et de formation spécialement prévues à cet effet. Par la suite, ils seront plus en mesure d'entraîner dans le mouvement les gouvernements provinciaux, et l'industrie privée.

Le Comité ministériel pour la conversion au système métrique encourage tout intéressé à introduire le SI, et lui assure toute sa collaboration. La mise en place du SI repose sur la coopération et la bonne volonté des intéressés.

Il est certain toutefois, qu'en adoptant le SI, le ministère déclenche automatiquement une réaction en chaîne dans toutes le industries connexes au transport et par extension, dans les entreprises secondaires de ce secteur.

SI: AIR — MARINE — SURFACE

Au ministère des Transports, le changement du système de mesure se traduit par une activité accrue aux administrations de l'Air, de la Marine et de Surface.

En effet, la réforme oblige chacun de ces secteurs à déployer des moyens d'application appropriés. A l'administration de l'Air on devra procéder à la standardisation dans le contrôle aérien. C'est en soi une amélioration de taille.

Pour y parvenir, il faut procéder à des modifications importantes, coûteuses, compliquées et très précises. Suivant un raisonnement logique, examinons les conséquences de la modification du contrôle aérien: d'abord il faut recycler le personnel en place, pour qu'il soit familier avec les nouvelles mesures; il faut que les instruments soient modifiés sinon changés pour reproduire les mesures métriques, que les plans et dessins des ingénieurs existent dans les mêmes mesures; il faut que ces instruments soient construits avec des pièces ayant des mesures métriques, et que les outils pour l'entretien de ces instruments soient aussi métriques. Ceci vaut autant pour le matériel au sol que pour le matériel volant.

De plus, il faudra prévoir avant que tous ces changements soient bien établis, une période pendant laquelle on pourra continuer l'entretien des avions construits d'après les mesures anglaises. Ceci peut aller jusqu'à 25 ans (espérance de vie d'un aéronef). Cela signifie que pendant un laps de temps assez long, il y aura dédoublement de service.

Finalement, il faut prévoir que les aéroports eux aussi subiront des modifications pour s'adapter au SI, à partir de la balance à bagages jusqu'à la longueur des pistes, en passant par le service de la température, les conteneurs et tout le transport aérien des marchandises.

A l'Administration de la marine, l'introduction du système métrique va aussi nécessiter beaucoup de modifications. En premier lieu, il faut procéder à l'établissement du SI dans l'industrie de construction navale. Donc, changement des plans d'ingénieur, de la mécanique, de l'outillage.

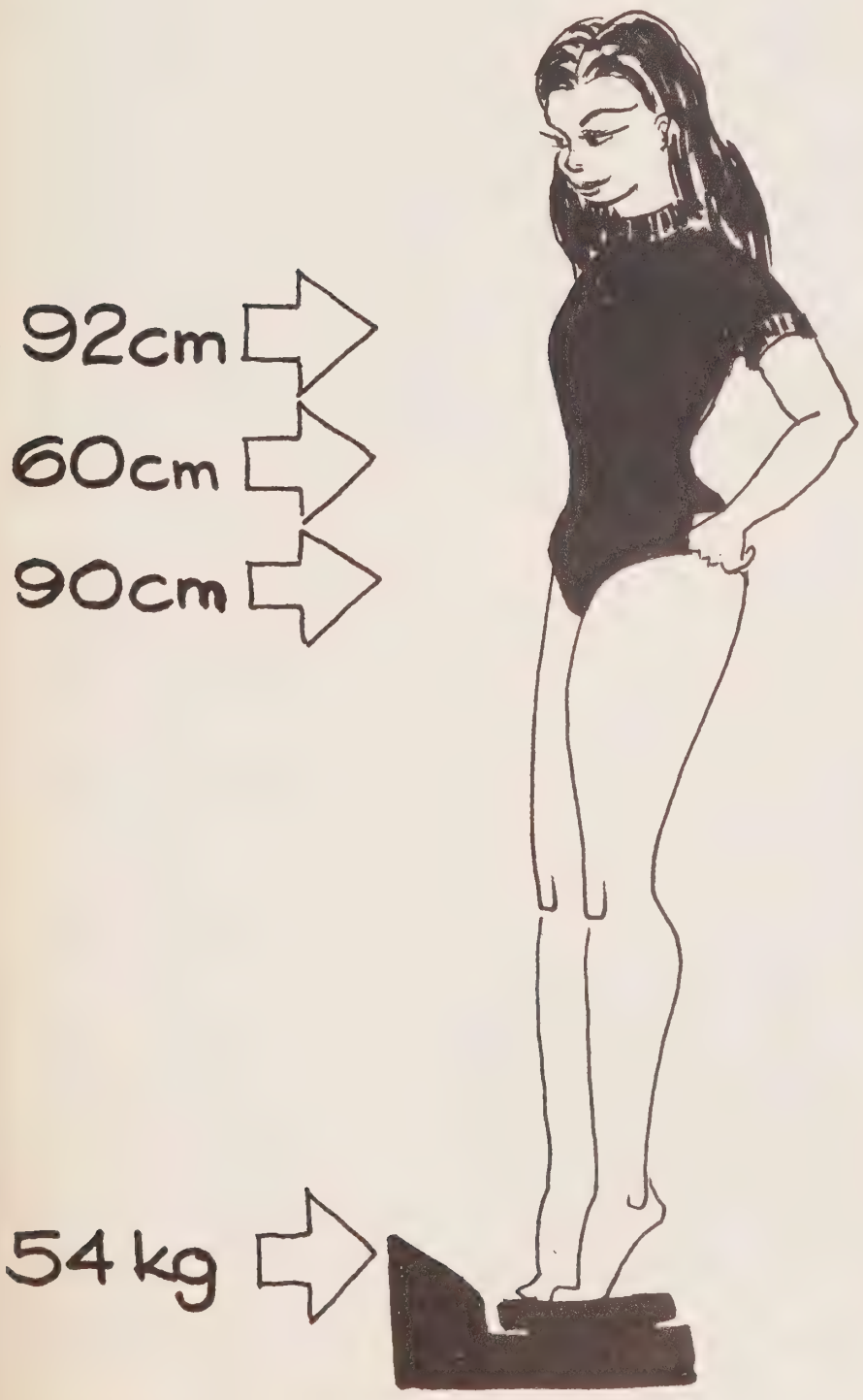
Pour la navigation, il faut introduire de nouvelles échelles de mesures de profondeur des eaux, de vitesse, de température.

Il faudra que les installations portuaires soient construites à partir des mesures métriques: longueur

des quais, adaptation des instruments servant à décharger les marchandises, nouveaux conteneurs.

De nombreux autres secteurs seront touchés par l'avènement du système métrique comme, par exemple, toutes les autorités des Ports nationaux, de la Voie maritime du Saint-Laurent, et d'autres administrations centrales opérant dans le domaine maritime.

On peut donc constater que les changements dans le secteur maritime sont aussi importants que ceux dans le secteur de l'air.



Les automobilistes ont pu remarquer sur certaines routes canadiennes, depuis quelque temps, des panneaux de signalisation qui témoignent de l'apparition du système métrique dans ce secteur. Peu à peu, ces nouvelles mesures s'intègreront à notre vie quotidienne. Dans peu de temps, nos automobiles nous indiqueront la vitesse en Km. (Kilomètre), et l'essence nous sera vendue au litre.

Mais il ne s'agit pas ici du changement le plus difficile à introduire dans ce domaine, quoique les compagnies pétrolières auront à procéder à de coûteux changements pour nous vendre l'essence au litre.

Non, il s'agit plutôt de toute l'industrie de fabrication automobile qui devra, tout comme pour l'aviation et la marine, introduire les modifications techniques nécessaires, à savoir: plans et dessins, machineries, pièces, outils. Il faudra aussi prévoir l'entretien des véhicules qui, pendant un certain temps, auront besoin de l'assistance technique de l'ancien système.

Des changements similaires seront opérés dans l'industrie ferroviaire.

SI SI SI

Toute l'opération est en marche, les grandes lignes sont déterminées, une première campagne de publicité nationale est sur le point d'être lancée.

Toute compagnie d'importance est parfaitement sensibilisée à l'introduction du SI. La coopération entre le Comité interministériel pour la conversion au système métrique, notre Groupe ministériel pour la conversion, et l'industrie privée primaire, secondaire, et tertiaire fonctionne bien.

BY
COLIN CHURCHER

Six Railwaymen In Search of the Russian Winter



Winters can be just as severe and as much of a handicap for rail operations in the Soviet Union as in Canada. Canadian rail experts travelled to the USSR in February to inspect the latest in Soviet rail equipment such as the snow removal equipment shown here.

Canada and the Soviet Union have one thing in common; a severe winter climate with a particularly heavy snowfall and low temperatures. So it is not surprising that Canadian rail experts working under the terms of a recently-signed agreement wanted to visit the USSR in winter months to see that country's rail systems in action.

I was the Ministry of Transport representative who travelled in February to Russia with five specialists from Canadian railways and an interpreter from the Department of the Secretary of State.

Our first full day was spent with officials at the Ministry of Railways on briefings on rail operations. That night, after a visit to the never-to-be-forgotten Moscow Circus, we received our first look at the Moscow Metro. Each station in the subway system is decorated in a different manner with an extensive use of marble, which, though expensive, is easy to maintain. Statues and sculpture are everywhere with a decorative chandelier dominating the whole setting. Another thing that strikes one right away is the cleanliness and lack of advertising in the stations.

We constantly interrrupted our subway journey to disembark and tour various stations; one built on the lower level of a two-tier bridge spanning the Moscow River and another with a vestibule the size of a football field.

During our stay in Leningrad we were fortunate enough to travel on the Metro system there, which is just as impressive as the Moscow system. There was a novel arrangement at one station where passengers stepped through doors similar to those of an elevator, directly to the doors of the train. Drivers would align the train doors with the station doors, so one never really saw the train from the station. The trains in



Enginemen on the Soviet rail system wear black ties on the job with white shirts and smart black uniforms. The controls are very similar to Canadian systems.

both Moscow and Leningrad reminded me of the Toronto system, although I did not find them as technically advanced. The noise levels were about the same as Toronto, but I could not help noticing the cleanliness again, and both the Moscow and Leningrad systems have a ban on smoking.

The second day of our trip was spent at a railway test track and research centre 40 kilometres outside Moscow. Engineers ran a heavily-laden train around a test loop of track every night to simulate heavy wear. We were all impressed with the depth and scope of the Soviet research.

That night we got our first experience as passengers on Soviet railways on the overnight express to Leningrad. As departure time approached, six pairs of eyes cast surreptitious glances at the clock and the train left precisely on time to the accompaniment of six silent nods of approval.

Our Leningrad arrival was also precise and after breakfast at our hotel we visited a hump classification and passenger car maintenance factory. Our discussions revealed that Canada and the USSR have much in common in rail problems.

The next day we journeyed by special train to inspect a high speed track switch that was developed for the advent of high speed trains. On the way back to Leningrad I rode in the cab of the electric locomotive where I discovered that the words are different but the functions are the same. The Russian enginemen are just as intense as their Canadian counterparts.

We left by overnight train for Petrozavodsk in Karelia and I awakened to find us travelling through terrain that reminded me very much of northern Ontario. On arrival we inspected a locomotive repair factory notable for its cleanliness and the house plants we saw throughout the factory - a woman's touch even in a heavy workshop.

Our next stop was Murmansk which is as far north as Inuvik in Canada. Out came my heavy winter gear, but I discovered the temperature was just below the freezing mark. There was some snow, however, and we saw an interesting demonstration of snow removal equipment. One of the impressive machines gobbles up snow as it moves forward and passes it into cars farther down the train. We left a Canadian flag in the railway museum as a memento after seeing demonstrations of rail wedge plows and a gigantic snow blower which could throw snow over a hundred metres.

The journey from Murmansk to Moscow was made in the "Arctic Express", a diesel train which ran at full speed through a snow storm made possible by an efficient signalling system.

The locomotive crew was neatly dressed in white shirts, black ties and a smart black uniform-quite a contrast to the Canadian coveralls and peaked cloth hat. The engine compartment was noisy but was so spotless I walked right through it without getting my hands dirty. The driving cab was at the front of the locomotive but the controls and procedure were very similar to our own.

After a quick flight to the new city of Novosibirsk on the Ob River in Siberia, we returned to Moscow for more meetings at the Ministry of Railways and then it was time to leave for home.

I discovered our hosts had much in common with us when we compared rail operations in winter, but one thing we will always treasure about our trip was the opportunity it offered us to sample the Soviet way of life.



'Samovar' is a Soviet copper tea urn found on each railway car, enabling a passenger to make his own tea any time of the day or night.

Marble is used extensively in stations along the Moscow subway system. It is expensive but easy to maintain



Search & Rescue

With the arrival of spring comes another boating season and with it another period of great activity for Canadian Coast Guard personnel engaged in Search and Rescue.

The Canadian Coast Guard operates 82 vessels and 26 helicopters which can respond to marine emergency calls. Included in the fleet are cutters, self-righting lifeboats, launches, and several inflatable rescue craft for inshore rescue operations. An aircushion Hovercraft is now in regular service on the West Coast. More than Coast Guard personnel are involved in Search and Rescue activities.

In 1973 the Canadian Coast Guard handled 2931 incidents and was responsible for rescuing 352 persons.

Studies show that most marine incidents in Central Canada and on the West Coast occur between June and September. Pleasure craft in the central region are involved in most of the incidents and on the West Coast, the majority of incidents involve pleasure craft. On the East Coast a larger number of marine incidents involve fishing vessels so that Coast Guard cutters on duty there are capable of operating in heavier seas.

A program of using four outboard-powered inflatable boats for Search and Rescue work on the West Coast has proved so successful that the Coast Guard is embarking on a five-year program to station 25 additional craft at strategic points on the West Coast, in the Great Lakes and the St. Lawrence River.

The lives of thousands of persons in distress have been saved due to the dedication of Coast Guard personnel and their ability to respond in emergencies.

Getting a tow. Most marine incidents requiring the services of Canadian Coast Guard Search and Rescue involve pleasure craft. A pleasure boater out of gas secures a tow line to get a tow back to port from a Coast Guard cutter.













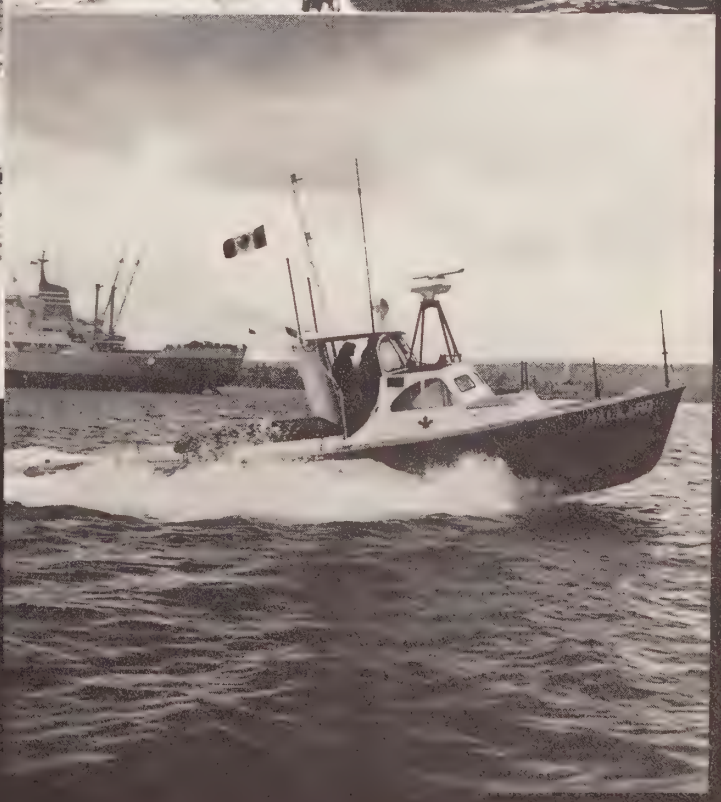
SEARCH AND RESCUE VESSELS

Ministry of Transport photographer Gor
Thomas captured on film Canadian Coast Gu
Search and Rescue vessels in action from coas
coast. The crews of these craft are preparing
another busy season of search and rescue work.









AVIRES DE RECHERCHE ET DE SAUVETAGE

Gordon Thomas, photographe au ministère des nsports, nous présente, sur cette photographie, navires de recherche et de sauvetage de la Garde ière Canadienne oeuvrant de l'Atlantique au ifique. A la veille d'une nouvelle saison, les équi- es de ces navires se préparent à effectuer de veau leur travail de recherche et de sauvetage.

Rescue from the Cliffs









Simulated rescues are conducted as part of a six-week training course to qualify Coast Guard officers as Hovercraft First Officers.

TRANSPORT CANADA recorded one such rescue recently when the three-man crew of the CCG Hovercraft was dispatched to Point Grey off Stanley Park in Vancouver, the scene of some twenty actual rescues since the Hovercraft went into service. Point Grey has a very rocky coastline which makes it almost inaccessible to surface craft and helicopter rescue is very hazardous because of the steep cliffs. Hovercraft are ideally suited for this kind of rescue.

Margie Wagenaar and Davida Miles played the roles of victim and friend for the simulation. After first aid was administered, the victim was transported by Hovercraft to Vancouver for transfer to a waiting ambulance.

All part of a well-run rehearsal.

NATIONAL TRANSPORTATION WEEK

Planning for this year's National Transportation Week gets under way with initial production of posters to publicize the event, scheduled to be held May 13-19. Participating with the Ministry of Transport are traffic clubs and affiliates of the Roads and Transportation Association of Canada (RTAC) as well as the transportation industry and community groups.

National Transportation Week, now in its sixth year, focuses public attention on the essential role which transportation plays in improving the quality of Canadian life.

Blaise Downey, Surface Liaison Officer of the Directorate of Public Affairs, Robert Turner, Public Affairs Director, and Gilbert Morier, RTAC Public Relations Officer, listen to Bill Overton of M.O.T.'s Central Publishing Services as he discusses the design for Ministry posters publicizing the event.

LA SEMAINE NATIONALE DES TRANSPORTS

La préparation en vue de la Semaine Nationale des Transports 1974 va bon train. On a déjà procédé à la production des affiches annoncant l'évènement, qui cette année, aura lieu du 13 au 19 mai. Cette Semaine Nationale des Transports 74, est le fruit de la participation du ministère des Transports, de l'Association de la Route et du Transport du Canada (ARTC), de différentes associations de transports, et de plusieurs groupements communautaires.

La Semaine Nationale des Transports qui sera tenue pour la 6ième année consécutive, veut attirer l'attention des canadiens sur le rôle important que jouent les transports dans l'amélioration de la qualité de la vie au Canada.

M. Blaise Downey, agent de liaison aux Affaires publiques, section Surface et Arctique, M. Robert Turner, Directeur des Affaires publiques, M Gilbert Morier, agent de Relations publiques de l'ARTC, écoutent M. Bill Overton du Service central de publication du ministère des Transports, M. Overton commente la présentation des affiches de la Semaine des Transports 74.



A Filing Revolution

The Ministry of Transport has more than 50 million documents in its files in Tower 'C' in Ottawa.

Every working day, 12,000 new documents are filed in M.O.T. Headquarters' filing system and these must be handled an average of six times before filing. Four million documents with a combined weight of 1,000 tons enter the Ministry's filing system annually.

Yet all this great quantity of M.O.T. documents, if microfiled, could be stored in 400 cubic feet of space (120 cubic metres)!

Microfiling is the filing of material on a form of microfilm, a photographic reproduction of an image many times smaller than its original size. It is now possible to reduce material to 1/150th of its original size.

But the greatest advantage of microfiling is found not in saving space but in the retrieving time taken to locate records. For example, a clerk seeking a document from a microfile needs only a minute to check an index, locate a cassette of microfilm and screen it to find the wanted document on a microviewer.

Another advantage of microfiling is the easy transfer of records from one locale to another. With microfilm, a jacket measuring four by six inches (105mm x 148mm) replaces a maximum of 98 pages of paper. Substantial savings will result from reduced mailing costs when the use of microfilm is more prevalent.

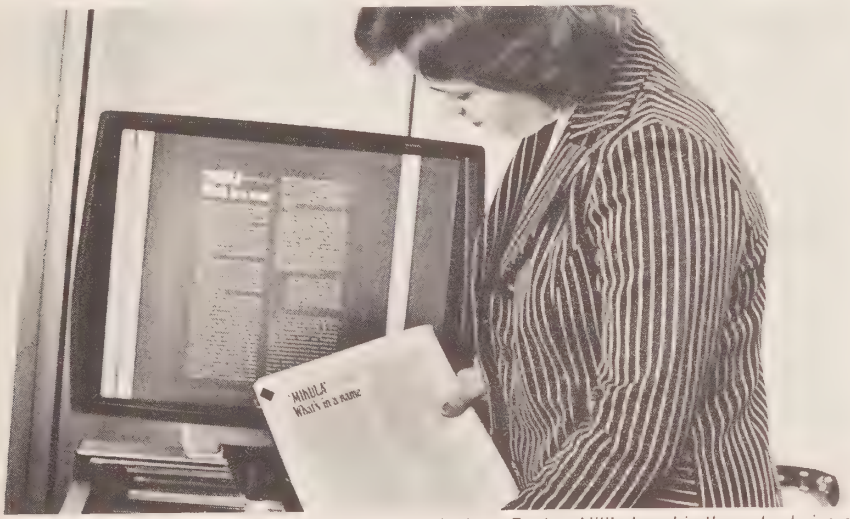
To facilitate the conversion of Ministry of Transport records to microfilm, a special Micrographics Advisory Services Division was proposed by the Interservice Microfilm Committee and was established last June as part of Management and Administrative Services.



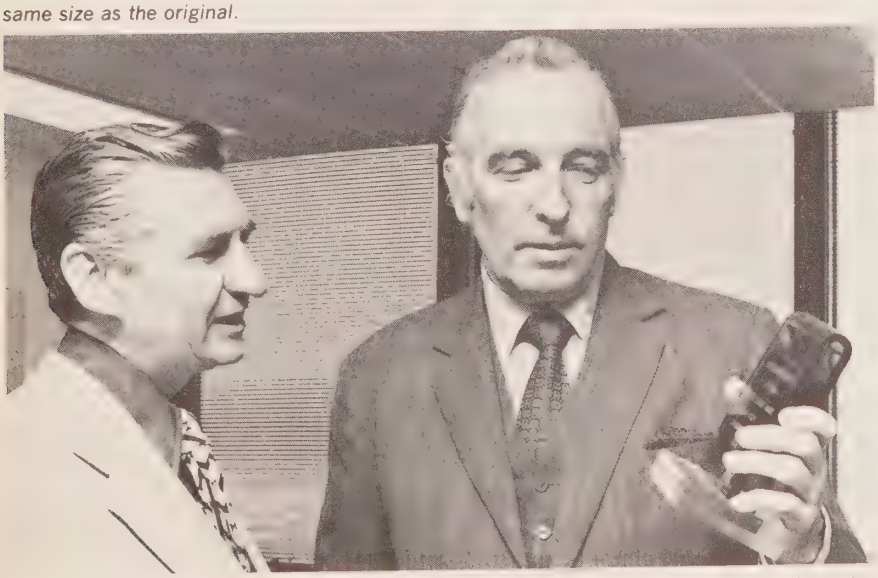
A stack of files three feet high can be reproduced on one cassette of microfilm Marlene Barton-Hill demonstrates the comparison



A year's material of TRANSPORT CANADA can be reproduced on three jackets of microfilm.



The little dot next to the heading of the page in Marlene Barton-Hill's hand is the actual size of the same page on microfilm. It can be easily reproduced on the microviewer behind her at the same size as the original.



A Ministry of Transport display at the recent "Microvention '74" convention took first place honours in the user's category. The booth was a joint project of the Ministry's Public Affairs Directorate and Micrographics Advisory Services Division. Admiring the first place trophy are Ken Davies, Micrographics Advisory Services Division Chief, and Deputy Minister O.G. Stoner.

Ken Davies, Chief of the Division, predicts great things for microfilm in the Ministry of Transport. "Eventually all M.O.T. records will be stored on microfilm or some form of miniaturization", he says.

Already there are many applications of microfiling in use throughout the Ministry. The Steamship Inspection Service of the Marine Safety Branch is currently converting to microfilm the plans of every government and commercial vessel being built for Canadian Registry.

The maintenance information for all M.O.T. airports will be microfiled within the next five years. All the engineering data of the Air Administration's and Marine Services' telecommunications branches is already contained on microfilm.

Soon all regional offices, airports, telecommunications centres and even Coast Guard ships will use microfilm for storing their records. The information would be on hand, rapidly retrievable, and require little space for storage.

Mr. Davies emphasizes the need for microfilm standardization in the area of systems, design and equipment: "Since in the foreseeable future microfilm will be routed or communicated between centres, it is essential that equipment and systems be compatible", he says.

Microfilm, since it can be so easily duplicated and stored, will ensure more secure preservation of essential data in case original records or material are damaged or destroyed.

The revolution of microfiling is just beginning with new developments taking place every day. In the not too distant future we predict readers of TRANSPORT CANADA will no longer read the magazine on paper stock, but will simply place a strip of microfilm in a viewer and read on.

An investigator of the Federal Aviation Authority in the United States is trying to trace an airplane that just might by chance have touched down in Canada some time during the past two years.

A planner of the Ministry of Transport's Air Administration is trying to establish how much stress an extended runway at an airport underwent during the last decade.

The data that both these men seek, though for widely different reasons, is now readily available because of the cooperative effort of various branches

KEEPING

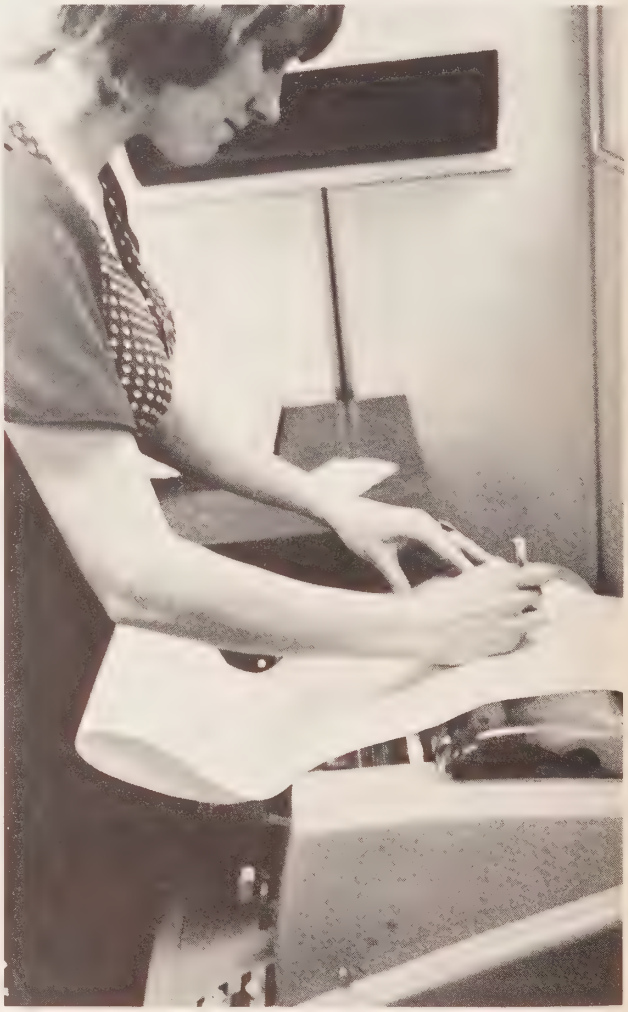
of the Ministry of Transport and the Statistics Canada Aviation Statistics Data Centre.

In 1974, more than seven million records from more than one hundred major Canadian airports will be recorded on the computer in Ministry Headquarters in Ottawa. This data can be retrieved almost immediately in many different forms.

So a single plan's movements can be traced across the country from airport to airport, or one can determine the number and type of aircraft using a particular runway, all from aircraft movement data stored on magnetic tape. This data has hundreds of important uses in the operating and planning of Canadian aviation.

Not too long ago data on aircraft movements was compiled by Air Traffic Control Assistants by hand and mailed at week's end to Ottawa. It took about 35 days for Statistics Canada statisticians to prepare their monthly surveys.

Now, within fifteen days, the Aviation Statistics Data Centre can prepare its monthly reports utilizing a new transmission system called ADIS (Automated Data Interchange System). The new process is a joint project of the Statistics Canada Centre and MOT Telecommunications and Electronics Branch, MOT Computer Services and the Air Traffic Services Branch of the Air Administration.



A communicator at the Headquarters Communications Centre in Ottawa scans a data message outlining aircraft movements, checking for completeness and accuracy.

TRACK

Data from 45 sources across Canada is fed daily to the MOT computer. This data from T & E aeradio stations covers more than 18,000 daily aircraft movements.

For example, let us trace the transfer of one day's data. An Air Traffic Control Assistant in the control tower in Winnipeg records in the daily log pertinent information about an aircraft such as its identification, type, destination, time in or out, runway used and whether it was a flight using instruments for its take-off or landing.

At the end of the day this log is delivered to the Winnipeg Aeradio office where a Radio Operator transfers the data to a message on paper tape and then sends the message to the Headquarters Communication Centre in Tower "C".



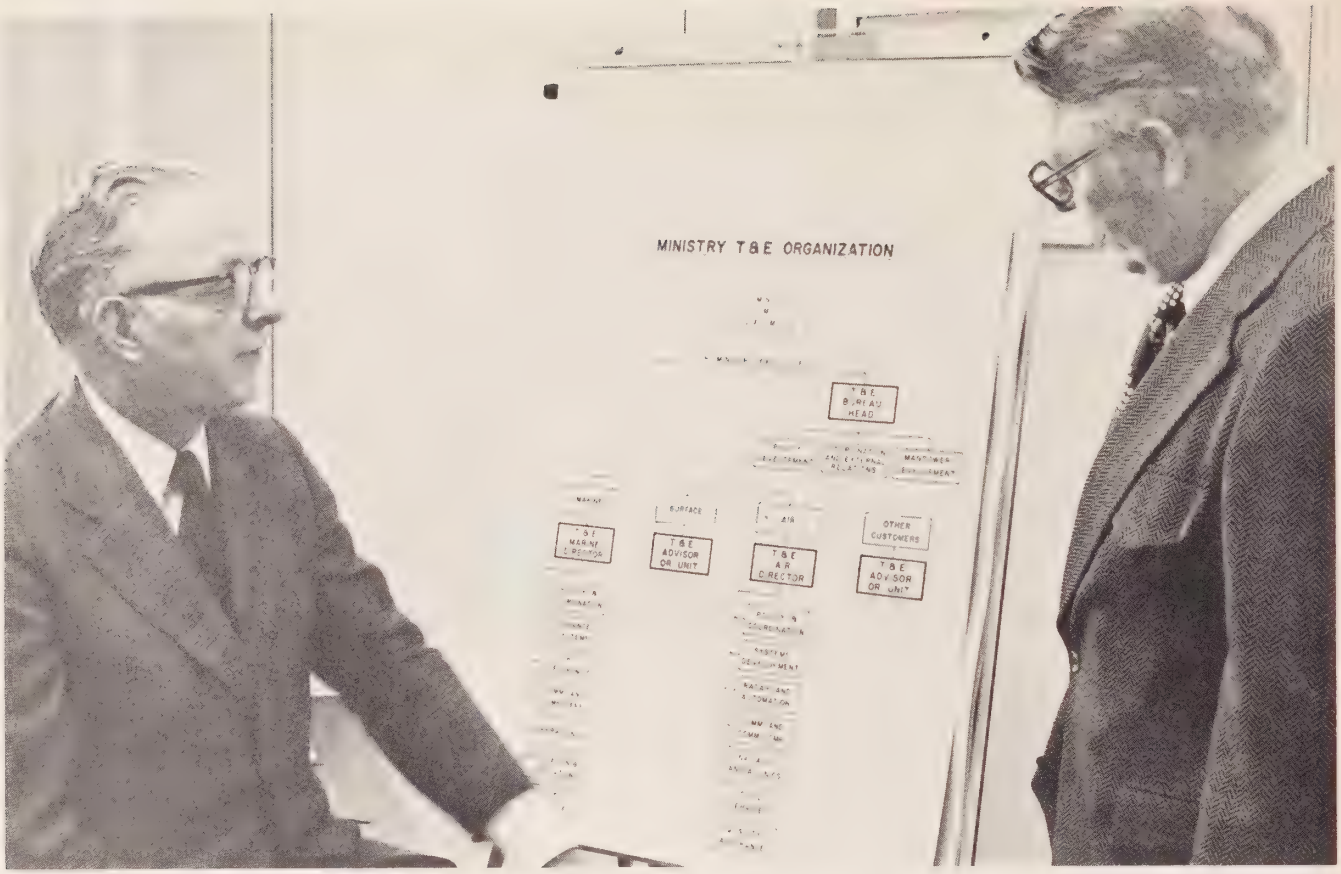
A computer operator at the M.O.T. Computer Centre in Ottawa loads a magnetic tape which contains one week's air traffic data from Canada's major airports.

In Ottawa all data is screened for accuracy and general completeness at the Communications Centre as it is also being recorded on magnetic tape at facilities in Montreal leased from Canadian Pacific Telecommunications.

At week's end the reels of magnetic tape are extracted from the computer in Montreal and then delivered to the MOT Computer Services Branch in Tower "C". The tapes are then processed through the MOT computers and a series of reports are prepared for delivery to Statistics Canada for analysis and final printing.

Thus, the statistics gathered in Winnipeg, have been transmitted to Ottawa where they are checked, while at the same time the data is stored on magnetic tape in Montreal, from where it is sent to Ottawa for final programming and reporting.

The new process has several advantages because it allows quicker, more accurate, and more economic transmission of aircraft movement data. But the project team behind the system feels it can add new refinements and improvements yet that will make their system even more efficient!



Earle F. Porter, Director-General of the new MOT Telecommunications and Electronics Bureau, discusses the reorganization of Ministry telecommunications and electronics activities with Stuart MacMillan of the Ministry's Legal Branch.

Reorganization for T&E

The Ministry of Transport's telecommunications and electronics activities were recently reorganized in order to improve management of resources that require the services of approximately 3,000 highly trained M.O.T. personnel.

Telecommunications and electronics activities comprise about one-fifth of the Ministry's financial and manpower resources with an annual expenditure exceeding $70 million. The reorganization is designed to put these resources to their greatest effectiveness and efficiency.

A Telecommunications and Electronics Bureau has been established which will be responsible for reviewing and coordinating policies concerning T & E activity within the Ministry. Earle F. Porter has been appointed Director-General of the new bureau with Robert Bennet and Boris Pavlov occupying the posts of Senior Advisors.

The reorganization also creates separate T & E branches in the Marine and Air Administrations of the Ministry. Boris Borodchak has been appointed Director, Marine Telecommunications and Electronics and Frank Lay becomes Director, Telecommunications and Electronics, Air.

The activities of T & E play a major role in almost all of M.O.T. operations. Canadian transportation is supported on a national and international scale by sophisticated navigational aids, radar, control and communication systems with the finest and best-maintained equipment available.



Artist's conception of Mirabel Airport, north of Montreal, which will open in 1975.
Représentation graphique du nouvel aéroport de Mirabel, au nord de Montréal, dont l'ouverture est prévue pour 1975.

transcan

suggestion awards

Normand Saumure received an Incentive Award of $600 for a suggestion concerning the revision of circulars and notices for the Civil Aviation component of the Air Administration.

M Normand Saumure, s'est vu remettre une prime d'encouragement au montant de $600. pour avoir suggéré un nouveau mode de révision des avis et circulaires à la section de l'Aviation civile de l'Administration de l'air.

Mrs. Gloria Ann Charbonneau of Edmonton received an award of $640 for suggesting revisions in the reports of 12 self-accounting airports on monthly sales to the Western Region.

Madame Gloria Ann Charbonneau d'Edmonton a reçu la somme de $640. pour avoir suggérer la revision des rapports de ventes mensuels de 12 aéroports indépendants de l'Ouest.

R.L. Proulx, an Electrical Standards Officer with the Western Region's Airports Branch, was recently presented with a cheque for $600 by D.C. McAree, Regional Manager of Airports for the Western Region. Mr. Proulx suggested revisions in the methods and equipment used to align VFR slope indicators at Canadien airports.

M. R.L. Proulx, agent des normes électriques à la section des aéroports de l'ouest, a reçu un chèque au montant de $600 de M.D.C. McAree, gérant régional aux aéroports de l'ouest, dans le cadre du programme de primes à l'initiative. M. Proulx à suggéré des révisions d'équipement et des méthodes pour les indicateurs VFR employés dans les aéroports canadiens.

D.J. Lienhart, Edmonton, Alberta $95.00

Mrs. G.H. Mathé, Wilsons Corners, Quebec $125.00

Allan Smith, Toronto, Ontario $125.00

Frederick Hornsby, Toronto, Ontario $125.00

Alexander Stadnyk, Fort Smith, N.W.T. $145.00

John McInness, Vancouver, B.C. $50.00

George Johnson, Erin, Ontario $240.00

Bienvenidi Cordon, Montreal, Quebec $65.00

Gary Wilson, Pierrefonds, Quebec $295.00

Cornelius Mckeenan, Calgary Alberta $125.00

Neil Honkanen, Sandspit, B.C. $50.00

Gordon Authier, North Bay, Ontario $50.00

Irvine Hambly, Richmond, B.C. $75.00

Dennis Beaudoin, Toronto, Ontario $150.00

Fernard Caron, Montreal, Quebec $200.00

Edward Taylor, Fitzroy Harbour, Ontario $80.00



prime à l'initiative



THE PARRY SOUND MARINE AGENCY THEN AND NOW

Much of the history of the Parry Sound Marine Agency is brought out in a picture taken in 1913 when compared to the one taken this winter, 60 years later.

The upper picture, taken by Maurice Blais, who was in charge at Parry Sound for 48 years, shows the first Agency, originally a bobbin factory, that was built near the water for convenience in obtaining raw material.

The building then housed offices, shops, and stores.

The building now accommodates mostly office space. New buildings have been constructed on the site to house a machine shop, a carpenter shop and a technicians' shop.

The new buildings are scheduled to stay, while the old Agency building is to be torn down and replaced by a new office building.

More modern shops will also be built.

LA BASE MARINE DE PARRY SOUND ONTARIO HIER ET AUJOURD'HUI

Une grande partie de l'histore de la base marine de Parry Sound nous est révélée quand on compare les deux photographies de cette page.

La photographie ci-haut date de 1913, elle fut prise par M. Maurice Blais qui a été, pendant 48 ans, reponsable de la station de Parry Sound. On y voit l'ancien quartier général de L'Agence qui abritait alors les bureaux, magasins et ateliers.

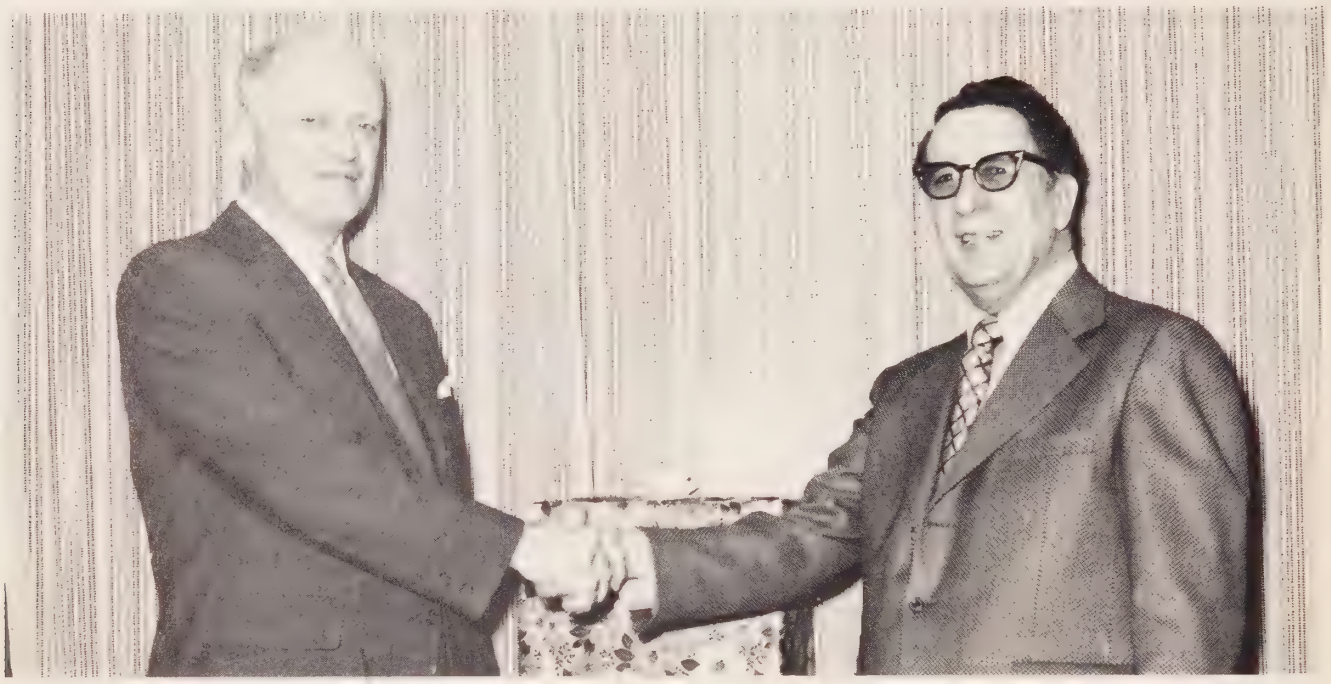
Aujourd'hui le tout est converti en bureaux. Des nouveaux édifices ont été construits pour abriter les ateliers de machinerie, de charpentiers et de techniciens.

On projette la construction de nouveaux édifices, alors qu'on remplacera l'ancien bâtiment principal par une nouvelle structure moderne.



Lionel Monette, Chief, Office Services in the Adminstrative Services Branch in Ottawa, has retired after 42 years in the Public Service. J.I. Carmichael presented Mr. Monette with luggage at a party held in his honour in Ottawa.

Monsieur Lionel Monette, chef du Groupe de soutien technique, coordination des programmes et des effectifs, à Ottawa, prend sa retraite après 42 ans de service à la Fonction Publique. Lors d'une réception organisée son honneur, M. Monette, s'est vu remettre une valise par M. J.I. Carmichael.



retirements retraites



Marguerite McCloskey, former Supervisor of Special Records in the Adminstrative Services Branch, was presented with a certificate to mark her 32 years of service by J.E. Arnaud, Chief, Records Management, during a retirement party in Ottawa for Miss McCloskey recently.

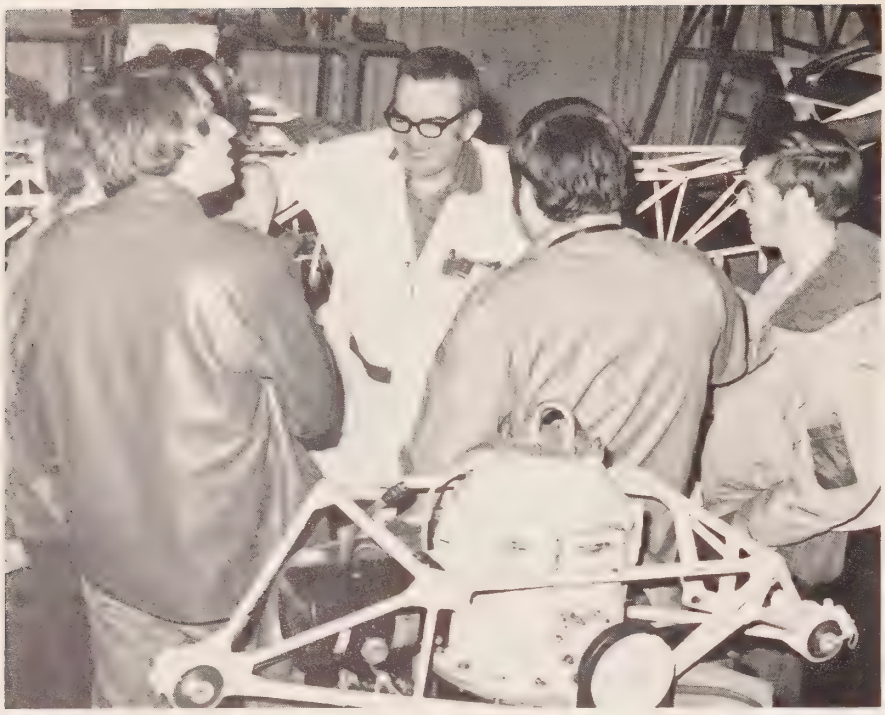
A l'occasion de sa retraite, Mlle. Marguerite McCloskey, ex-surveillante aux documents spéciaux, à la section des Services Administratifs, à reçu de Monsieur J.E. Arnaud, chef du Services des documents, un certificat de reconnaissance soulignant ses 32 ans de service à la Fonction Publique.

Robert M. Aldwinckle has been appointed as Administrator of the Ministry's Surface Administration. Mr. Aldwinckle also chairs the Federal-Provincial Committee on Western Transportation. A professional engineer, Mr. Aldwinckle was formerly Director of the Transportation, Communication and Science Division of Treasury Board's Program Branch.

Monsieur Robert M. Aldwinckle a été nommé administrateur en chef, à l'Administration canadienne des transports de surface..Il cumule en plus le poste de président au Comité fédéral-provincial sur les transports de l'ouest. Avant sa nomination M. Aldwinckle, qui est ingénieur, occupait le poste de directeur des transports à la Section des sciences et comminications, dans le cadre du programme relevant du Conseil du trésor.







Students from Canadore College in North Bay recently toured Ministry of Transport aircraft and facilities at Ottawa International Airport. The students are members of the College's first aviation courses and included eight helicopter flight students and twenty aircraft maintenance engineer students. The first Canadore College aviation class will graduate this year.

Les étudiants du collège Canadore de North Bay, ont récemment visités les appareils et les installations du Ministère des Transports à l'aéroport international d'Ottawa. Parmis ces premiers étudiants à suivre le cours d'aviation du collège de Canadore, huit(8) sont étudiants en pilotage d'hélicoptère alors qui vingt(20) sont élèves étudiants pour l'entretien des aéronefs. Cette année aura lieu la première graduation du cours d'aviation.

The first national motorcycle training course for instructors was held last month in Ottawa. The course sponsored by the Canada Safety Council had Stu Munroe of the Ministry of Transport's Surface Administration as Chief Instructor. Instructors from all across Canada who attended the course have returned to their regions to organize similar courses.

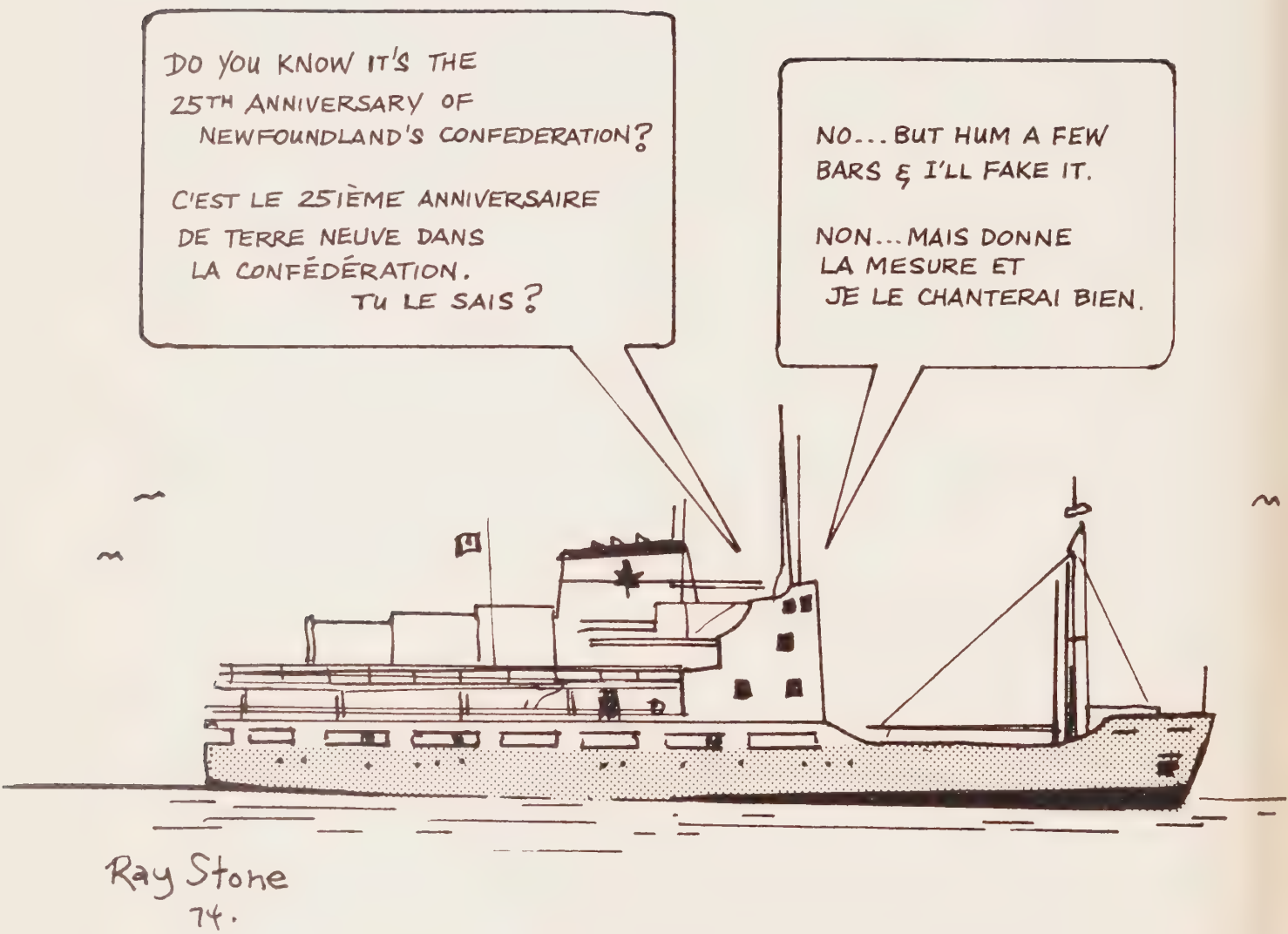
Le premier cours national d'entraînement pour instructeurs de motocyclette, a eu lieu le mois dernier à Ottawa. Le cours était parrainé par le Conseil canadien de la sécurité. M. Stu Monroe du ministère des Transports, Administration des transports de surface, faisait office d'instructeur en chef. Dès la fin du cours, les instructeurs sont retournés dans leur région respective afin de mettre sur pied des cours d'entraînement semblables.



Transport Canada salutes Newfoundland's Silver Anniversary

Transports Canada rend hommage à Terre-neuve en son 25ième Anniversaire




DO YOU KNOW IT'S THE 25TH ANNIVERSARY OF NEWFOUNDLAND'S CONFEDERATION?
C'EST LE 25IÈME ANNIVERSAIRE DE TERRE NEUVE DANS LA CONFÉDÉRATION. TU LE SAIS?
NO... BUT HUM A FEW BARS & I'LL FAKE IT.
NON... MAIS DONNE LA MESURE ET JE LE CHANTERAI BIEN.
Ray Stone
74.

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CONTENTS/SOMMAIRE

Transport Council Message Message du Conseil des Transports	3
New Horizon	4
Securité Automobile	7
A Rewarding Career	10
Hamilton Harbour	13
Historic Fort Gets New Tower	16
Labrador Diary	18
La Grande Débâcle	21
Transcan	23

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MESSAGE

When I became president of The St. Lawrence Seaway Authority in November of last year, the waterway was nearing the end of its busiest season. In 1973, tonnage increased over the previous year by 7.4% in the Montreal-Lake Ontario section and by 4.7% in the Welland section, setting new records for the fouth consecutive year. A total of 57.6 million tons transited the Montreal-Lake Ontario section while the Welland handled 67.2 million tons. These records were made possible mostly by favourable weather at both the beginning and end of the season.

Following an historic trend, bulk commodities dominated the traffic scene and more than made up for a decline in the general cargo category. Iron ore, the largest of the bulk items, resumed a growth pattern that had been interrupted in 1971 and 1972 registering solid gains. A strong North American economy increased the demand for domestic steel products, resulting in larger shipments of iron ore through the Seaway. The strong demand for grain, American as well as Canadian, also contributed substantially to the increase in cargo tonnage. The important role played by the Seaway in accelerating the transportation of crude oil to Montreal refineries is also worthy of note. As a result of the priority extended to tankers, more than 4.5 million barrels of this commodity were carried on the Seaway before the close of the navigation season.

The realignment of world currencies and the following devaluation of the dollar, American as well as Canadian, have reduced considerably the import of manufactured iron and steel products and other goods with the result that general cargo decreased by 25%. Fortunately, the substantial growth in bulk commodities more than made up for this loss in tonnage and revenue.

Turning to the present navigation season, we can speculate about this year's outlook for traffic. It would appear that the demand for bulk commodities will continue to be strong in 1974. Iron ore shipments, for example, should again increase this season in order to supply North American steel producers who are producing still more. Coal movements should increase this year. In recent years, the steady conversion of Ontario Hydro to gas and oil and the successful operation of the nuclear plant at Pickering had caused a decline in shipments through the Welland Canal. This season, higher utilization by steel producers and the anticipated shipments of coal from Western Canada should provide a moderate increase in the traffic of this commodity. Developments in the energy situation will have a major bearing on shipments of petroleum products moving via the Seaway from Ontario to Montreal and other Eastern ports. Present indications are that movements of crude oil shipments from Western Canada will be continued in 1974, but it is still too early to say how important this traffic might be. The availability of imported crude as well as the price differential between domestic and imported crude will determine the volume that will move in the Seaway in the months ahead. Uncertainties exist regarding 1974 shipments of grain through Great Lakes ports. It may be difficult to maintain the level of exports achieved these past few years in view of a decreased stock position and the difficulties encountered in moving grain by rail.

In brief, the picture of Seaway activity in 1974 appears reasonably bright despite uncertainties affecting key commodities and the loss in traffic experienced at the beginning of the navigation season due to the strikes of the seamen and pilots. The objective of the Seaway staff naturally remains the maintenance of the high level of service in the face of anticipated rising tonnages. In order to achieve this, we shall closely monitor the effect of additional tonnages on the capacity of the system while, at the same time, keep on searching for improvements aimed at increasing that capacity. We may thus determine, to the extent possible, the day when the limit will be reached and an expanded Seaway becomes necessary.

Lorsqu'en novembre dernier j'en assumai la présidence, l'Administration de la Voie maritime du Saint-Laurent terminait sa quinzième année d'opération et aussi sa plus fructueuse. En effet, les tonnages de 1973 excédèrent ceux de l'année précédente et des augmentations de 7.4% dans la section de Welland furent enregistrées, établissant ainsi de nouveaux records pour la quatrième année consécutive. Au total, 57.6 millions de tonnes transitèrent la section Montréal-Lac Ontario alors que le canal de Welland en acceptait 67.2 millions. Des conditions météorologiques favorables, tant au début qu'à la fin de la saison, ont contribué à établir ces records.

Comme à l'habitude, c'est le trafic des marchandises en vrac qui a prédominé et qui a compensé une baisse marquée dans le trafic des marchandises diverses. Le minerai de fer, l'élément le plus important du trafic en vrac, a repris l'essor interrompu en 1971 et 1972 pour enregistrer une solide augmentation. La forte expansion économique nord-américaine a fait monter la demande de produits sidérurgiques de fabrication domestique amenant une hausse du trafic du minerai de fer sur la Voie maritime. La forte demande de grain, tant canadien qu'américain, a également contribué à l'augmentation des tonnages.

Le rôle important qu'a joué à l'automne la Voie maritime dans la livraison de pétrole brut de l'Ouest canadien aux raffineries de Montréal mérite aussi d'être souligné. Grâce à la priorité accordée aux pétroliers, plus de 4.5 millions de barils d'huile ont pu transiter la Voie maritime avant la fin de la saison de navigation.

La dévaluation du dollar, tant canadien qu'américain, ayant affecté les importations de produits manufacturés, le trafic des marchandises diverses s'en vit réduit de 25%. Heureusement, la hausse marquée par le trafic en vrac a plus que contrebalancé cette réduction de tonnage et de revenue.

Si nous nous tournons vers la saison actuelle, on peut maintenant esquisser ce qu'elle pourra être. Les livraisons de minerai de fer devraient augmenter afin de subvenir à la production accrue des aciéries nord-américaines. Le trafic du charbon devrait aussi augmenter cette année. La conversion graduelle au gaz et à l'huile qu'a effectuée l'Hydro-Ontario ainsi que le succès de la centrale nucléaire de Pickering ont., depuis quelques années amené une baisse dans le trafic du charbon sur le canal de Welland. Cette année, la demande accrue des aciéries, ainsi que les livraisons prévues de charbon en provenance de l'Ouest du Canada, devraient hausser ce trafic. Tout indique que les mouvements de pétrole brut en provenance de l'Ouest canadien se continueront en 1974, mais il est trop tôt pour tenter d'évaluer l'importance que prendra ce trafic. La disponibilité de pétrole brut importé ainsi que l'écart des prix entre le pétrole canadien et importé détermineront le volume qui transitera la Voie maritime au cours des prochains mois.

Le volume des expéditions de grain en provenance des ports des Grands Lacs reste douteux pour 1974. Il sera probablement difficile de maintenir le niveau des exportations atteint depuis quelques années, vu l'épuisement des réserves et les difficultés que connaît le transport ferroviaire.

En résumé et en dépit de l'incertitude qui joue sur certaines catégories du trafic de la Voie maritime, les perspectives pour 1974 laissent place à un certain optimisme. Nous, de la Voie maritime, nous sommes donné comme objectif de maintenir dans l'avenir, face aux tonnages toujours croissants, la qualité reconnue du service actuel. Pour y arriver, nous comptons combiner nos efforts persistants pour améliorer l'efficacité de nos installations à une évaluation continuelle des effets de ces hausses de tonnages sur leur rendement. De cette façon, nous pensons en arriver à fixer le jour où l'ultime capacité sera atteinte et une nouvelle Voie maritime deviendra nécessaire.

NEW ON THE HORIZON

by **DAVE AUSTIN**
EDITOR
TRANSPORT CANADA

It may be one of the world's smallest airlines — but the new STOL service linking Montreal and Ottawa is being closely watched by aviation experts all over the world.

Airtransit, a subsidiary of Air Canada, is a Federally - funded Ministry of Transport program operating the world's first "pure" air service using Short Take-Off and Landing Aircraft. The service is an experimental one to assess the STOL aircraft in a demonstration short-haul passenger service over the next two years.

STOLports have been constructed at Rockcliffe, fifteen minutes by auto from Parliament Hill in Ottawa, and at Victoria Auto Park, five minutes from downtown Montreal. Travelling time from downtown Ottawa to downtown Montreal is 75 minutes by STOL as compared to 120 by regular jet air service, 140 by private auto, 144 by train and 155 by bus.

The service has six twin-engined de Havilland Twin Otters, each carrying eleven passengers, operating on hourly flights between 7:30 am and 10:00 pm with additional flights available at peak periods.

When one enters the STOLport at Rockcliffe the bright interior and spaciousness are the first things that catch the eye. Two uniformed attendants check reservations, issue tickets and escort passengers to the bright red aircraft on the tarmac outside.

Since flying time is only 40 minutes there are no flight attendants aboard. There are baggage compartments below and coat racks to the rear of the cabin near a small compact washroom.

The Captain uses the intercom to ask everyone to fasten seatbelts and soon the plane is at the end of the runway ready for takeoff.



The de Havilland Twin-Otter used for the STOL demonstration service seats eleven passengers.

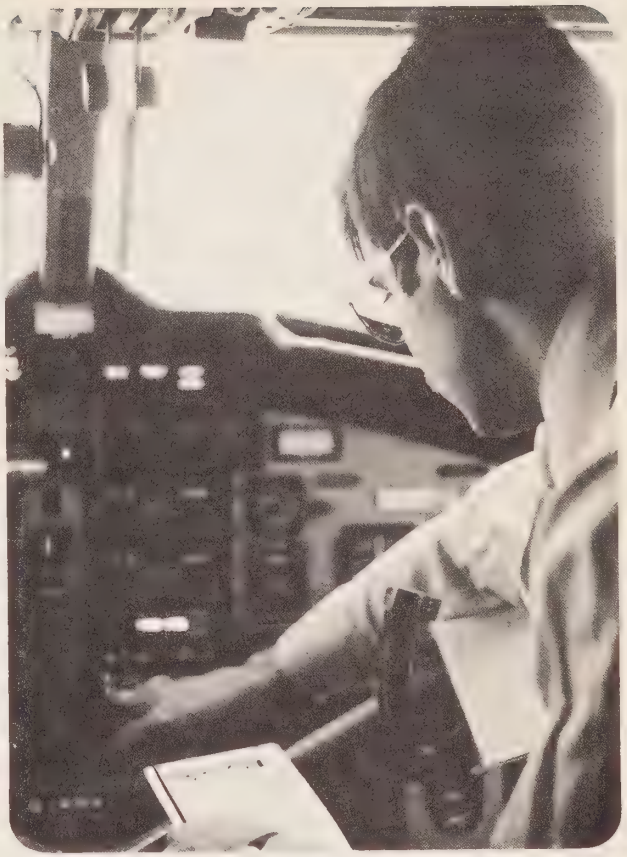


Six Twin-Engined de Havilland Twin-Otter Short Take-Off and Landing Aircraft are being used in a two-year demonstration STOL service between Montreal and Ottawa.

Anyone who has read about the quick lift and steep incline of STOL aircraft braces for a sharp snap or strange feeling that never arrives. The takeoff is remarkably smooth, although a look out the window confirms the plane is climbing about twice as steeply as a jet aircraft.

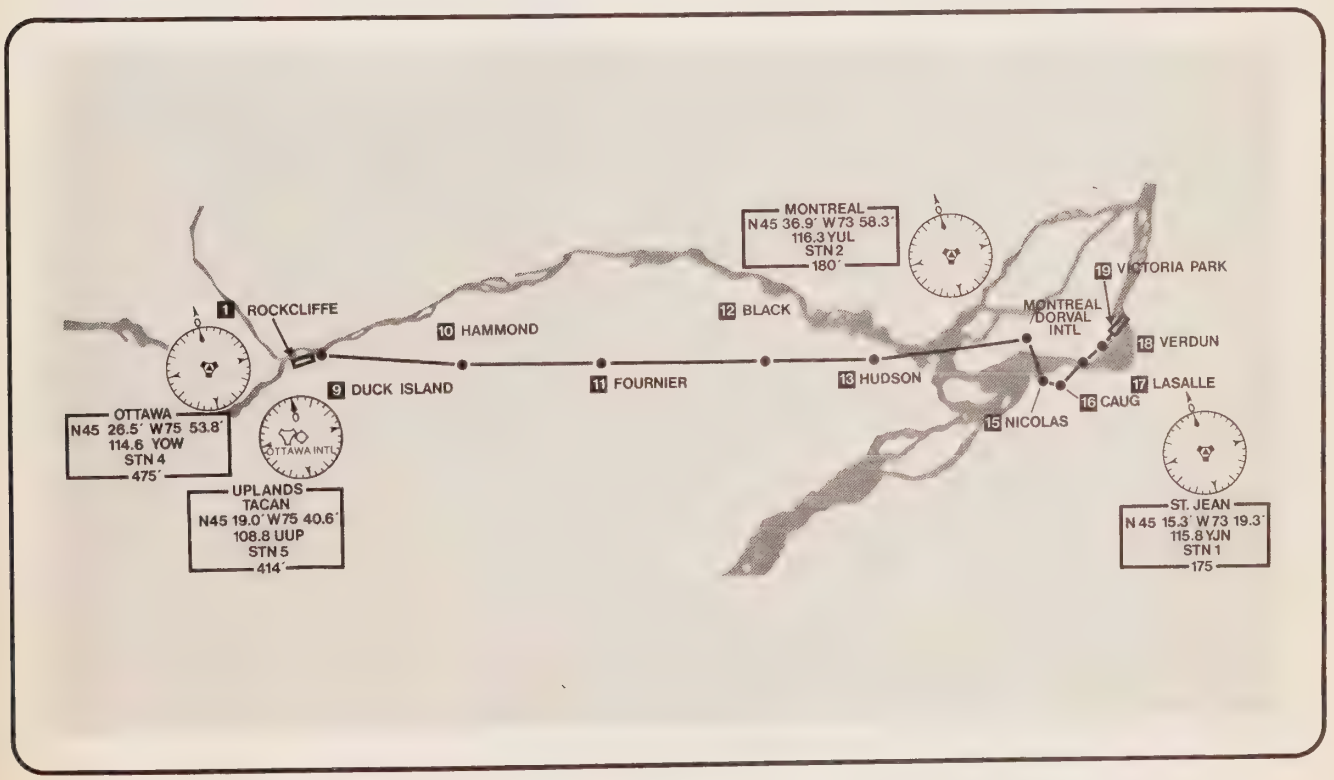
Clouds and high winds bring some turbulence but the pilot brings the plane to the 7,000 level where one gets a glimpse of Ottawa and the surrounding countryside that only the view from a small plane can provide.

Using an on-board computer the pilot follows a programmed flight profile to Montreal. Air traffic control monitor the flight only to ensure separation as the aircraft crosses through the Montreal Control Zone. Since the STOL aircraft are the only users of the STOLports and STOL airway system there are no traffic delays in the air or on the ground.



The Flight Officer uses a flight profile to program an onboard computer to guide the flight from Ottawa to Montreal.

The STOL aircraft follow a specially programmed route from Rockcliffe Airport in Ottawa (upper left) to the Victoria Auto Park in Montreal (upper right). Total flying time is 40 minutes.



Conversation is no problem in the Twin Otter even if one happens to be sitting right under a wing next to a prop. And the ride is surprisingly free from bumps and turbulence even though wind gusts below are exceeding 25 miles per hour (40 k.p.h.).

Soon the view of the Quebec countryside is replaced by a look at the St. Lawrence River, the city skyline and then the STOLport near the Expo site. A steep decline that leads to a smooth landing and then a transfer to the STOLmobile for transit to downtown Montreal.

STOL has many advantages. To the passenger it means less travel time on short-haul trips. The ecology benefits because less land is required and noise is greatly reduced compared to conventional air transport.

The bright red STOL Twin Otters, modified to intensified transport standards for the demonstration service, are making history. They are after all — something new on the horizon.

Passengers board a STOL Twin-Otter through a back door that swings down to become a set of stairs.



SECURITE AUTOMOBILE

par **NORMAND HEROUX**
REDACTEUR FRANCAIS
TRANSPORT CANADA

Au Canada, l'an dernier, lors de la fin de semaine de la Confédération il y a eu 92 pertes de vie dues aux accidents routiers. Le bilan mortel se répartit comme suit: le Québec et l'Ontario en tête, avec 29 morts chacun. L'Alberta — 9, la Colombie-Britannique — 7, la Nouvelle-Ecosse — 4, Terre-Neuve, le Nouveau-Brunswick, le Manitoba et la Saskatchewan — 3 chacun, et enfin l'Ile du Prince-Edouard — 2.

Ce triste bilan risque de se répéter lors des longues fins de semaines de la fête du Travail et de l'Action de grâce.

Si les chiffres précités vous impressionnent, que dire alors des quelque 500 morts de la route prévus aux Etats-Unis, lors de la fin de semaine du 4 juillet... et des très nombreuses pertes de vie sur les routes de France, d'Australie, d'Allemagne, et de Suède, pour le Week-end suivant.

Le problème, on le sent, dépasse les frontières de nos municipalités, de nos provinces, et même de notre pays.

Afin de trouver une solution à ce cauchemar international, les membres de l'OTAN (Organisation du Traîté de l'Atlantique Nord) ont mis sur pied en 1969, un comité sur les Défis posés à la société moderne.

Ce comité s'est occupé d'un projet spécial — projet pilote sur la sécurité routière — que le Canada a approuvé en 1973, alors qu'il a accepté de jouer un rôle clé en prenant la responsabilité de conduire une enquête à l'échelle mondiale sur les problèmes de la conduite en état d'ébriété.

Le comité a été mis sur pied dans le but de réaliser les objectifs suivants: coordonner les efforts des pays membres vers une solution commune; prévenir, dans toute la mesure du possible, une augmentation du nombre des victimes de la route au cours des cinq prochaines années; assurer une collaboration permanente pour la mise en commun des connaissances techniques en matière de sécurité routière, et favoriser les voyages internationaux.

Le ministère des Transports a entrepris, l'an dernier, des consultations avec les autorités des ministères provinciaux des transports, afin de s'assurer leur coopération pour atteindre les objectifs de l'OTAN. Au cours du mois de mars de cette année, les représentants des ministères de Transports des dix gouvernements provinciaux s'entendaient sur un programme fédéral-provincial destiné à améliorer le niveau de sécurité routière. Ce programme national entend respecter les objectifs mis de l'avant par l'OTAN.

Dans l'immédiat ce programme doit couvrir l'utilisation accrue des ceintures de sécurité; des lois et règlements exécutoires en rapport avec la conduite en état d'ébriété; l'élimination des obstacles routiers;

Prototype de ceinture de sécurité fourni par une importante entreprise de fabrication automobile européenne sur lequel le ministère des Transports fait actuellement des tests. La ceinture, fixée à l'encadrement de la fenêtre et près des hanches des passagers, s'ajuste automatiquement à ces derniers, dès la fermeture de la portière.



des normes de sécurité applicables aux camions et autobus; une meilleure inspection des véhicules; un programme amélioré d'éducation des conducteurs et une intensification de la surveillance policière.

Il est certain que l'application de ces mesures commencent à se faire sentir parmi nous. En effet, on a tous entendu parler, ou mieux constater, l'introduction de ceintures de sécurité dans nos automobiles, et aussi des interventions gouvernementales visant à réduire le nombre de conducteurs inaptes à prendre le volant à cause de leur état d'ébriété.

ALCOOL VS ROUTE

Il est reconnu que l'absorption d'une quantité donnée de liquide alcoolisé engendre chez les individus, la diminution de capacité de réflexes.

On connaît les effets, en temps normal, d'une telle situation pour l'avoir déjà expérimentée. Cependant, on réalise peut-être moins les conséquences qu'une telle situation peut créer si, à ce moment, on prend le volant d'un véhicule motorisé. Afin d'en donner une petite idée, disons qu'une enquête menée à travers le Canada a révélé que dans les cas d'accidents mortels de la route, 78% des conducteurs ont une quantité d'alcool dans le sang de .10% ou plus, et que *dans 50% des cas les conducteurs ont ingurgité de l'alcool très peu de temps avant leur mort.* On a en outre remarqué que 20% des conducteurs de fin de soirée et de nuit ont les réflexes dangereusement diminués par l'alcool, alors que 5% sont jugés tout à fait inaptes à prendre le volant.

Ne croyez pas que cette situation soit unique à notre pays; il en est ainsi dans tous les pays industrialisés. Néanmoins, on peut noter qu'en certains pays le taux de 50% que connaît le Canada est abaissé à 10%. Ce qui prouve qu'on peut dès maintenant déployer des efforts et espérer des résultats en vue de diminuer les ravages engendrés par la conduite en état d'ébriété.

Très préoccupé par ce problème, le ministère des Transports du Canada a accepté, à l'automne de 1973, dans le cadre des recherches de l'OTAN, de diriger et de compléter une étude sur l'alcool et la sécurité routière.

Le projet de recherche mené par le Canada a conduit aux activités suivantes: la mise sur pied d'équipes canadiennes de recherche qui se sont rendues chez quelques-uns des pays membres afin de discuter avec eux des problèmes; la préparation et la distribution d'un questionnaire sur l'alcool et la conduite d'un véhicule. Ce questionnaire a été distribué dans 28 pays, et couvrait différentes mesures; l'analyse et la compilation des 28 questionnaires; la tenue d'une série d'études-pilote en vue de développer des méthodes d'enquête sur la route; établissement des normes d'enquête en coopération avec d'autres pays; exécution de quatre projets canadiens, dont une étude à Edmonton en octobre 1973, une étude sur l'ivressomètre, un programme de réhabilitation pour conducteurs en état d'ébriété et une campagne d'éducation; la parution de trois rapports: "L'Alcool et les accidents de circulation", "Résultats d'une enquête routière menée sur place" et "Résultats de l'enquête et guide explicatif des tests de l'ivressomètre".

Les études entreprises ont eu pour conséquence de nous faire réaliser l'existence d'un besoin certain de nouvelles législations, et la nécessité d'entreprendre des campagnes publicitaires afin de prévenir les périls qu'entraîne la conduite en état d'ébriété.

LES CEINTURES DE SECURITE

L'expérience passée et les études menées ont prouvé que les ceintures de sécurité sont susceptibles de réduire de 50% les blessures et les mortalités causées par les accidents routiers. Compte tenu que les ceintures de sécurité actuellement en usage peuvent être améliorées et réduire davantage les conséquences des accidents de voiture, il vaut la peine que nous nous y attardions.

Réalisons seulement que si nous parvenions à étendre l'actuel usage des ceintures de sécurité, nous pourrions sauver des centaines de vies par année. Au Canada, en 1972 par exemple, 4,500 personnes sont décédées dans des accidents de la route. Si on considère que 85% des véhicules impliqués étaient équipés de ceintures de sécurité, mais que seulement 15% des passagers les bouclaient, on peut conclure qu'à utilisation maximale, 1,700 personnes auraient pu avoir la vie sauve.

Dans les meilleures conditions, en moyenne seulement 15% des passagers canadiens se préoccupent d'attacher leur ceinture de sécurité. Cela malgré les nombreuses campagnes menées à ce sujet.

Ce modèle combine en un joint unique une ceinture sous-abdominale et une ceinture-baudrier qui s'intègre aux dispositifs d'attache situés près des hanches des passagers Si la ceinture n'est pas fixée dans la position prescrite, un mécanisme d'alarme sonore et lumineux se déclanche à l'allumage.

Les raisons données par le public pour ne pas s'en servir sont nombreuses et ingénieuses, mais aucunement acceptables. On soutient que les risques d'accidents sont si bas que cela ne vaut pas le trouble de s'attacher... qu'il n'y a aucune loi qui oblige à le faire... qu'on se sont brimer dans sa liberté personnelle... etc...

La majorité silencieuse, quand interrogée sur le sujet, va ensuite vous déclarer: "On est pour les ceintures de sécurité". Cependant, il ne semble pas y avoir une profonde compréhension des raisons qui font qu'on est pour. Il faudrait réaliser que les ceintures de sécurité, lorsqu'employées, réduisent les risques de blessures et de morts accidentelles, en cas d'accidents automobiles. Des études dans tous les pays industrialisés le démontrent.

Au début de 1974, le ministère a essayé de faire réfléchir le public à ce sujet. Lors du Salon de l'Auto, Place Bonaventure, à Montréal, en janvier 1974, le ministère a monté un stand où le public avait l'occasion d'apprécier les effets bénéfiques engendrés par l'utilisation des ceintures de sécurité, en comparaison avec une autre démonstration où celles-ci n'étaient pas en place. D'autres méthodes d'éducation populaire ont été prises et seront encore prises dans ce sens.

Il est possible, sans la nécessité de mesures législatives, d'encourager le public à faire usage des ceintures de sécurité. A cet effet, des systèmes mécaniques peuvent aider ou obliger les passagers d'un véhicule à se ceinturer.

Parmi ceux-ci, on peut signaler un mécanisme d'avertisseur lumineux ou sonore, ou les deux combinés, qui se déclenche quand on démarre le véhicule ou lorsqu'on avance, et que les ceintures ne sont pas dans la position où elles devraient être. Il y a aussi un modèle de ceinture qui s'ajuste automatiquement au conducteur. Le ministère des Transports est actuellement à étudier un tel prototype.

Grâce aux recherches actuelles et futures que le ministère se charge d'entreprendre, peut-être pourrons-nous lire en première page du journal du 2 juillet 1999, "Aucune perte de vie sur les routes canadiennes au cours de ce long congé de la Confédération"...



A REWARDING CAREER

When Kemp Ross and Jim Calvesbert first entered the newly established Canadian Coast Guard College in Sydney in 1965 they dreamt of being masters of their own vessel. This spring the dream came true.

Captain Ross and Captain Calvesbert, both 27, are the first graduates of the Coast Guard College to become masters of their own vessel. The two will alternate as master of the Coast Guard Search and Rescue Vessel *Rapid*, the largest full-time search and rescue vessel on the Great Lakes, which will be stationed at Goderich on Lake Heron.

The *Rapid*, the first coast guard R-type cutter to work a regular shift on the Great Lakes, has a twelve man crew. The two captains with their respective crews will work two weeks on and two weeks off.

Captain Ross, a Cape Breton native, is conscious of the responsibility of being master of a vessel. "Though during my training I have been in command of upwards of fifteen men, this is my most important post. Here you are the master — it's my ship and I am responsible for everything that goes on. My training has brought me along to where I know I can do the job and bear the full responsibility."

Captain Calvesbert, who was raised in Brantford, Ontario, knows that many people are watching the work of the first Coast Guard College graduates to become masters. "Its a lot of responsibility. The people we deal with often only see that I am the captain and am only twenty-seven years old. My big hope now is to show everyone that the Coast Guard's faith in the College and its graduates is well founded."

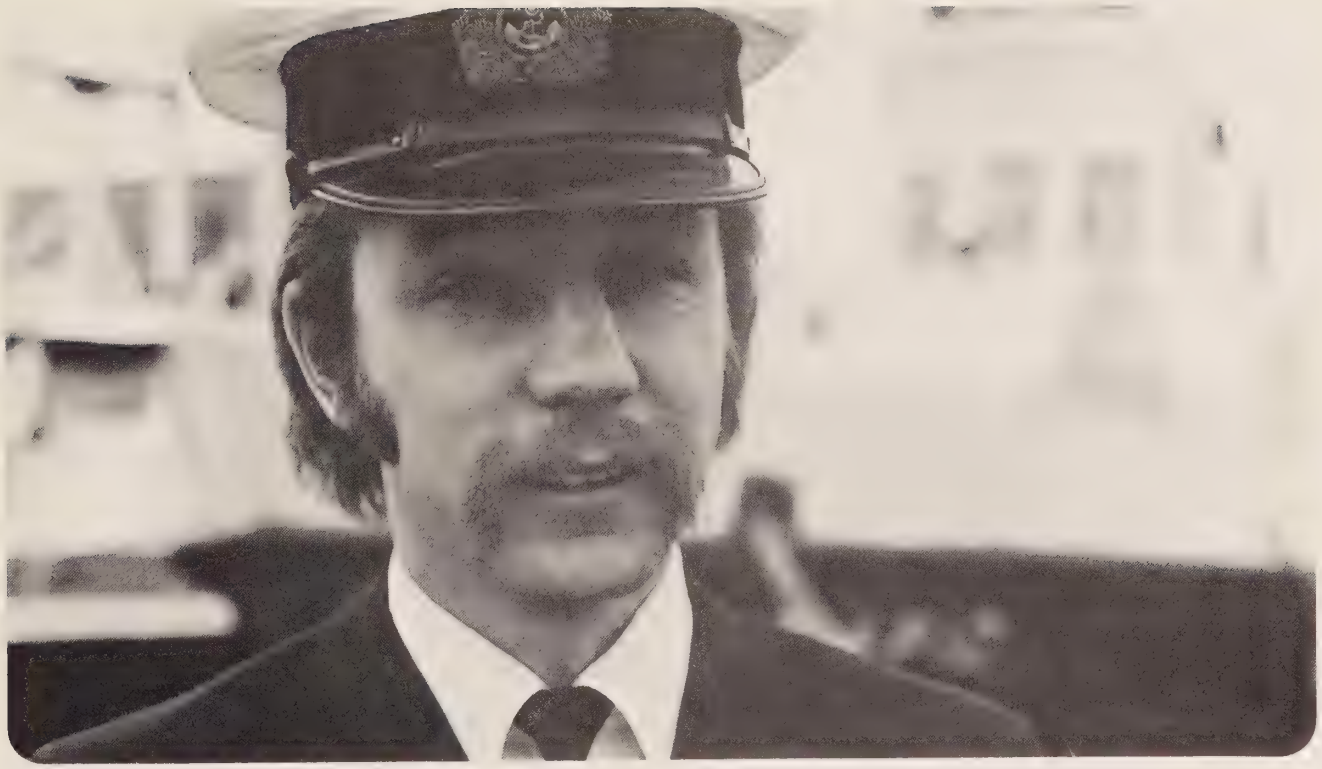
At the Coast Guard College, both took the navigator's course with studies in map-reading, compass, mathematics, French, as well as many hours spent learning the fundamentals of what makes a ship run. The College also emphasizes an active sports program to keep candidates in the best of physical condition.

During the four years of training, the candidates also spent a great deal of time aboard vessels, obtaining vital practical experience. Both Captain Ross and Captain Calvesbert admit that they were as seasick as they ever hope to be in their lives during a ten-day orientation voyage aboard the *Bluenose II* in their second year at the College. "But we still had to do our regular watch, and I spent the worst 72 hours of my life there", Captain Calvesbert says.

After graduating from the College, both officers were assigned to various ships in the Coast Guard fleet. Captain Calvesbert was aboard *CCGS John A. MacDonald* when she escorted the tanker *Manhattan* during her historic voyage through the Canadian Arctic. Captain Ross was assigned to the Quebec Marine Agency where he had the opportunity to serve on every type of vessel from buoy-tender to ice-breaker. In 1972 he received his master's certificate which qualifies him to command a Coast Guard vessel of any size in the fleet.

Captain Calvesbert spent 18 months as assistant to the Coast Guard Rescue Centre Officer in Trenton, Ontario. "There I had the opportunity to see the overall activities of all search and rescue activities-Coast Guard, Armed Forces and American, on the Great Lakes and I found it a much different experience than one gets serving on a particular ship. It brought home how important our work is."

Captain Calvesbert had one experience while at the Coast Guard College that will forever remind him of the importance of search and rescue work. While ferrying a boat from Newfoundland to Nova Scotia



Captain Kemp Ross, one of the two first graduates of the Canadian Coast Guard College to become master of his own vessel.



Captain Jim Calvesbert, co-skipper of the *Rapid,* knows the importance of search and rescue work because he has been shipwrecked himself.

he and some friends encountered rough seas and were forced to ground the vessel near an island. The young men had to swim for their lives and fell exhausted on the island's beach at about three in the morning. "We awoke at dawn and saw hunters and realized that we were not on a deserted island, but on the island of St. Pierre", he says. "The kind manner in which those men treated us brought home to me the feelings people in trouble must experience when they see one of our vessels coming to the rescue. It is a feeling I'll never forget."

Captain Ross is a keen recruiter for his alma mater. "When I entered the College, I decided it was the opening for a good career and an adventurous life. It has been just that." He thinks the Coast Guard with its variety of assignments at sea and on shore is a most interesting career for everyone.

Captain Calvesbert is also very enthusiastic about the variety of roles offered by the Coast Guard. He is one of the first officers to qualify as a Hovercraft First Officer during a special course run in Vancouver earlier this year.

Captain Calvesbert and two of his officers hold a galley conference.



HAMILTON HARBOUR

Although over 1500 miles inland, Hamilton Harbour is very much an active seaport on the St. Lawrence Seaway system. Ocean-going "salties" as well as "lakers" have made the port the fifth largest in Canada, tonnage-wise. In 1970, more than 12.6 million tons of cargo were handled, while last year's total exceeded 13.2 million tons.

Personalized service is the port's motto, with the emphasis placed on bulk cargoes ranging from soybeans to locomotives. Basically, the port is the focal point for channelling essential raw materials required by Canada's two largest steel producers, Stelco and Dofasco.

Another step toward streamlining the personalized service offered by the port was the erection of a "bubble" type dockside warehouse capable of storing 25 thousand tons of fertilizer at one time. Special unloading and trans-shipment facilities permit the handling of record-setting imports of chemical fertilizer.

With so much marine activity taking place within the harbour, the possibility of a serious oil spill is always present. To handle such an emergency, the Port of Hamilton Spill Control Group has been established and should the need arise, will closely liaise with the Ontario Water Resource Commission and the Canada Centre for Inland Waters.

The port is ideally situated at the head of Lake Ontario and is linked with a network of super highways and railways which unite metro Hamilton with the rich inland markets.

The fifth largest port in Canada is Hamilton Harbour, 1,500 miles inland. This National Harbours Board port handled more than 13.2 million tons of cargo last year.



HAMILTON HARBOUR






















AKE









HISTORIC FORT

Fort Charlotte has meant protection for thousands of ships as they passed under the guns of the huge fortress on George's Island and into the safety of Halifax Harbour.

Now Fort Charlotte once again will play an active role assisting ships entering and leaving the Harbour, after the installation of a 45-foot (13.7-metre) remote radar tower there. The Ministry of Transport used a helicopter to place sections of the tower in place over the site of the fort's gun placement.

The Ministry of Transport developed the design of the radar tower in conjunction with the National and Historic Parks Branch of the Department of Indian and Northern Affairs in order to preserve the

TS NEW TOWER

historic and aesthetic characteristics of this local landmark.

The radar tower, 115 feet (34.5 metres) above sea level, houses in its 16-foot (4.8-metre) spherical fiberglass dome a radar unit that will transmit information by microwave to the vessel traffic management centre at Chebucto Head at the seaward entrance to the harbour.

Construction at the tower on George's Island and its radar system is part of the $800,000 traffic regulation system for Halifax Harbour announced last year by the Minister of Transport and is part of the Ministry's program of vessel traffic management on Canada's east coast.





LABRADOR DIARY

by JIM NITSMAN
MARINE AERADIO
GOOSE BAY

Jim Nitsman, a Labrador native, joined the Ministry of Transport as an Electronics Technician in 1969.

In excerpts from his diary of a trip last September by boat to Cape Makkovik we get a brief glimpse of the work of a Marine Aeradio Electronics Technician at Goose Bay.

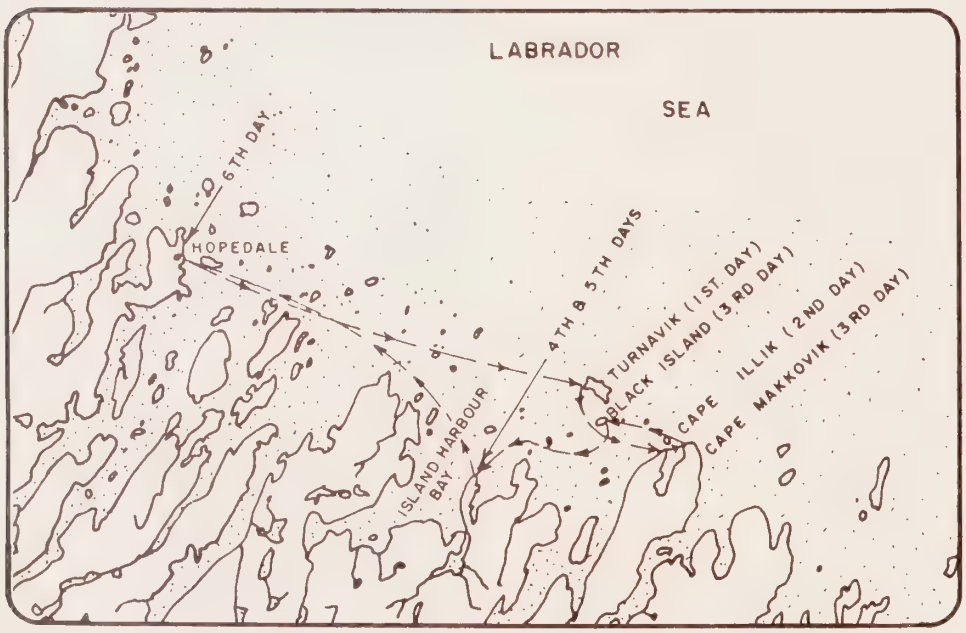
Wednesday, September 19, 1973

Left Hopedale 2:00 p.m. this afternoon to repair low frequency beacon at Cape Makkovik with experienced guides Joe Hunter and Gus Decker. Bucking strong head winds we arrived in Turnavik just before dark and decided to camp there for the night.

Thursday, September 20

High winds and snow flurries kept us awake most of the night. Dusting snow off our sleeping bags around 5:45 a.m. we found the winds too strong to attempt the last leg of the journey to the Cape. Adverse weather conditions lasted until 5:45 p.m., at which time we decided to head for Black Island where better shelter areas could be found. As it turned out we bypassed Black Island completely and made it as far as Cape Illik. Soon after we arrived, a large flight of geese landed nearby. With rifles in hand, and visions of a hearty meal, we set out in pursuit of our feathered friends. Luck was with us, we managed to bag two geese even though darkness had set in.

That night, after an excellent meal and smoke, we slept comfortably in an old fishing shack near the shore.



This map of northern Labrador traces the six-day voyage of Jim Nitsman and his boat's crew from Hopedale at upper left to Cape Makkovik and return via Island Harbour Bay.

Friday, September 21

Finally made it to Cape Makkovik and managed to have the beacon on the air by 9:30 a.m. Somehow, the main power switch had been turned off. After changing the keyer-timer unit, returned the transmitter, and topping up the 12 volt battery, we began our return journey, only to make it as far as Illik, due, once more, to strong winds.

Our midday meal consisted of the last tin of food and no bread, having run out of it that morning. The meal was not quite as appetizing as the previous evening's meal of roast goose.

Later that day we discovered we were not the only occupants of the cape as we came upon another motorboat and its crew, also on their way to Hopedale. They invited us to join them for a meal which was very much appreciated as our supplies were gone.

Around 2:00 p.m. the weather cleared enough for us to attempt to continue our journey. We decided to team up with them and hitch a ride with the motorboat. Halfway across the bay we hit a bad storm and only made it as far as Black Island. Winds near gale force persisted for the remainder of the day forcing both crews to camp on the island for the night.

Saturday, September 22

The weather situation had not improved so we prepared to sit tight until such time as we could make a safe start home. About 6:30 p.m. it began to clear up and both crews started across the bay for Tigigasuk. But, lady luck dealt another blow. Our engine stopped running about 8 p.m., and as the other boat had gone ahead we were left with only one alternative — paddle the three miles to shore. Before we had made much headway, a strong wind altered our course to the other side of the bay and we drifted in the rain and cold for six hours. At one point we nearly capsized due to a breaker near a shoal. We finally landed at a point just south of Island Harbour Bay around 3:30 a.m. Sunday morning, tired, wet and hungry we erected our tent in the dryest spot we could find.

Sunday, September 23

Awoke about 7:45 a.m. to the same weather conditions we had experienced the day before, only the rain had stopped. As we were standing on shore looking out over the bay, we spotted the motorboat belonging to Abia Kuigak and crew (our companions from Cape Illik). They were approaching Anton's Island about four miles away. We carried some gas to the top of the hill and lit a fire to try and catch their attention, but the attempts were quelled by the strong prevailing winds which all but ate up our smoke and fire. Much to our disappointment we went unnoticed.

After securing the tent we began to work on the outboard engine, only to find a bearing had seized up on the alternator shaft. After removing the bearing we decided to put it back together without the bearing, but, to no avail it seized up again after a couple of pulls. That left us with no choice but to wait for help from passing boats.

Owing to the fact that our food supplies had all but gone, our Sunday meal was a simple one — three sardines each and one marshmallow for dessert. We then set up a watch system between three of us, Joe, Gus, and myself, at twenty minutes each. On my four o'clock watch, I spotted six white partridges and rushed

back to break the news. We managed to kill all six of them and that evening boiled three for supper.

No boats sighted all day.

Monday, September 24

No boats sighted all morning during our watch. Gus and I went hunting in the hopes of finding something edible, but came back empty handed, finished off the last of the partridges for lunch.

Gus Decker, while on watch, spotted the boat "Nonia", outside of Anton's Island at 3:30 p.m. We promptly lit another fire but again we were passed unnoticed. Nothing was sighted all afternoon unitl 5:20 p.m. when another boat was spotted across the bay near Tigigasuk. We all gathered on the hill and lit another fire which we hoped would catch their attention. This time, much to our relief we were seen.

A longliner, towing an R.C.M.P. boat which apparently had been searching for us when one of its engines broke down, came ashore approximately 6:40 p.m. Greetings were exchanged; a beer and a good smoke was enjoyed by all.

We loaded our boat aboard the longliner, which would take us all back to Hopedale, but, it was decided that everybody would spend another night on the Island as strong winds still plagued the area.

Tomorrow — homeward bound.

Tueday, September 25

Arrived back at base 12:10 p.m. on a beautiful calm and clear day, with thoughts crowding our minds of home and the amenities of modern living, six eventful days after our departure to ensure navigation aids are operational at all times.

Electronics Technician Jim Nitsman of Goose Bay Marine Aeradio and his son with a new Christmas morning friend.



Gravure parue dans le Canadian Illustrated News du 23 mai 1874. A gauche les deux cheminées renversées du N.G.C.C. Napoléon III. A droite l'imposant traversier de la Compagnie de chemins de fer du Grand Tronc fortement endommagé. A l'avant plan le vapeur Cartier complètement détruit.



LA GRANDE DEBACLE

par TOM APPLETON

Une des principales tâches des brise-glaces de la Garde cotière canadienne est d'empêcher les inondations le long du Saint-Laurent.

Au siècle dernier, les brise-glaces n'existaient pas et chaque printemps voyait se former le pont de glace en aval de Québec. En hiver, les gens traversaient le fleuve sur le pont de glace qui était assez solide pour supporter le poids des chariots et des marchandises. Mais la débâcle était un spectacle impressionnant et une grave menace pour toute la population riveraine. Les résultats étaient souvent désastreux.

Voici le récit de la grande débâcle de 1874, l'une des pires dans l'histoire du Canada. Le 8 mai 1874, le navire à vapeur Napoléon III, orgueil de la flotte du ministère de la Marine et des Pêcheries, passe l'hiver à Québec avec le bateau à roues Druid et des douzaines d'autres bateaux à vapeur, voiliers et chalands. Tous ces bateaux, que des estacades protègent des glaces flottantes, attendent la débâcle en aval de Québec avant de commencer une nouvelle saison sur le Saint-Laurent. Au large, le vent change de direction; déjà le ciel clair du matin se couvre de nuages sous l'effet d'une légère brise sud-est et le pont de glace va s'effondrer d'un moment à l'autre.

On a chargé les provisions à bord du Napoléon et celui-ci est prêt à prendre la mer; l'équipage se prépare à partir pour le golfe avec, à bord, des feux et des bouées; deux colonnes de fumée flottent légèrement au-dessus des cheminées noires pendant que des fragments de houille incomplètement brûlés retombent nonchalamment sur les bateaux entassés près du quai. Non loin de là, un voilier, le Harald Haarfanger, est ancré dans un endroit exposé, dans l'attente d'un poste à quai. A part de ce dernier, il n'y a plus aucun bateau sur le fleuve à marée basse; ils s'abritent avec appréhen-

sion dans chaque anse et derrière chaque quai. Au début de l'après-midi, le thermomètre continue de monter et le vent vient rafraîchir la foule qui s'est rassemblée sur la terrasse surplombant les anciens remparts; les gens savent qu'ils n'auront pas longtemps à attendre.

A trois heures vingt-cinq, le barrage éclate dans un puissant grondement et des dizaines de milliers de tonnes de glace sont relâchées avec une force incontrôlable. Un jeune journaliste du Morning Chronicle, sort précipitamment de son bureau et, fendant la foule, va se placer à un endroit bien situé, d'où il note hâtivement: "... les gens sont surexcités et arrivent en foule à la terrasse Durham. Le champ de glace tout entier, qui va d'une rive à l'autre du fleuve et s'étend à perte de vue vers l'amont, avance régulièrement avec une puissance irrésistible. Le bruit causé par le frottement des morceaux de glace les uns contre les autres s'accentue à mesure que s'accroît l'embâcle..."

Vu d'en haut, ce phénomène peut paraître majestueux, mais il semble menaçant à ceux qui se bousculent près des bateaux rassemblés. Le Harald Haarfanger est la première victime; balancé sous les secousses, son câble se rompt et le bateau est projeté contre une goélette qui se trouve non loin de là; tous deux sont balancés contre la masse de bateaux, la flotte entière s'empilant et donnant contre le quai dans un vacarme de ferraille et de bois brisé. Le Napoléon est projeté contre le coin du quai et, sous la pression de la glace, sa coque se fend à babord sur plus de 60 pieds et jusqu'à une profondeur de 18 pieds. L'arête du quai fait une entaille de 30 pieds dans la coque à tribord et le navire coule dans 15 pieds d'eau et s'enlise dans la boue.

De tous côtés, les bateaux s'écrasent les uns contre les autres ne laissant qu'une confusion de mâts et de vergues emmêlés à mesure que la glace et l'eau les remplissent jusqu'au garde-corps. Le Druid a de la chance, bien qu'au début, tout porte à croire qu'il est endommagé; mais sa solide coque de fer a supporté le choc dans un nuage de fumée et de cendre. Par miracle, on ne déplore aucune perte de vie, mais on estime que le total des dommages aux bateaux atteint un million de dollars, ce qui équivaudrait aujourd'hui à une somme dix fois plus importante.

Lorsque la nouvelle du naufrage du Napoléon parvient à Ottawa par télégramme, la première réaction est de faire vendre l'épave aux enchères et l'agent maritime reçoit des instructions dans ce sens. Mais ce dernier est déterminé à ne pas perdre un des vapeurs les plus puissants du fleuve, surtout qu'il sait que le remplacement du navire est bien peu probable. Avec l'aide du maître-charpentier, l'agent fait renflouer l'épave et la met en cale sèche. Sans faire cas des suggestions d'Ottawa qui estime que le Napoléon, une fois dépouillé de ses gréements et modifié, peut servir de bateau-phare, l'agent maritime rédige, peut de temps après, le rapport suivant:

"Dès que le Napoléon III fut en cale sèche, j'ai ordonné la conduite d'une expertise, à la suite de quoi j'ai proposé au Ministère que le navire soit recouvert d'un spardeck; il pourrait ainsi transporter entre trois et quatre milles barils et, grâce à la solidité de sa coque et à la puissance de ses moteurs, il pourrait avantageusement accomplir les tâches nécessaires pour satisfaire aux exigences de ce district en ce qui concerne le service riverain et le service de phares. Ma proposition a été approuvée, et selon les instructions que j'ai reçues, j'ai ordonné l'exécution des travaux nécessaires afin que le navire soit prêt à l'ouverture de la saison de navigation de 1875".

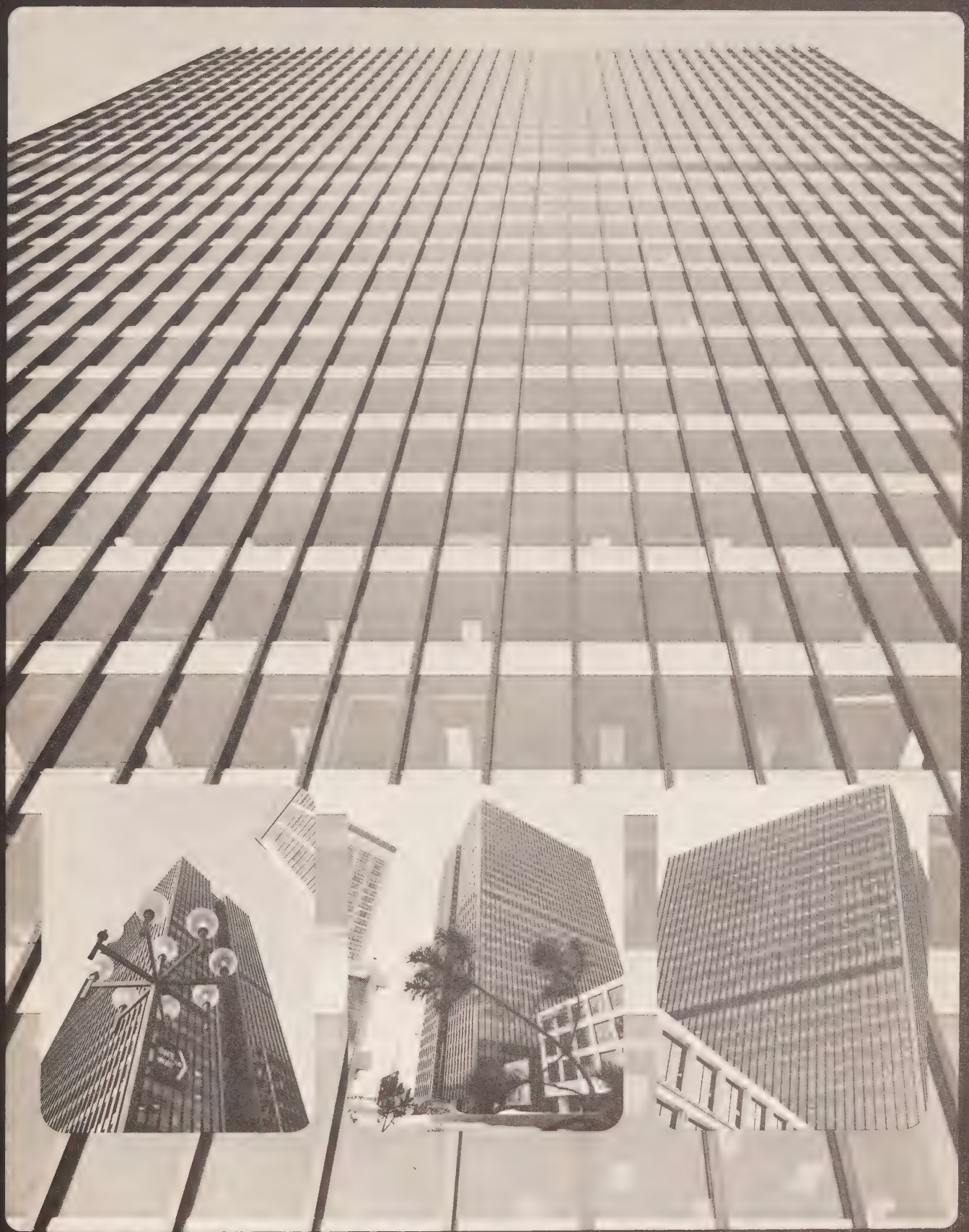
Le Napoléon bénéficie ainsi d'un sursis et transporte des barils d'huile minérale au cours de voyages innombrables aux phares situés dans le golfe du Saint-Laurent et à Terre-Neuve. Il est perdu en 1890 lorsqu'il s'échoue dans la baie Little Glace au Cap Breton.

Pour en revenir à ce qu'on a appelé la Grande Débâcle, on peut lire dans l'éditorial du Morning Chronicle, du 9 mai 1874:

"... S'il était possible de garder le fleuve ouvert — et, à une époque de progrès, on peut raisonnablement supposer q'un tel projet est réalisable — , on pourrait adopter un système de transport par bacs au moins aussi économique que le transport actuel par chariot. On éviterait ainsi les ennuis et les pertes que nous devons subir chaque année. La construction d'un puissant éperon de fer qui servirait uniquement à briser les ponts de glace nous permettrait peut-être de résoudre ce problème qui se manifeste de façon désastreuse."

En réalité, ce n'est qu'avec l'arrivée des brise-glaces Montcalm, Champlain et Lady Grey vers les années 1904-1906 que les premiers efforts ont été faits dans le but de prévenir les inoncations par des opérations systématiques de rupture des embâcles. Aujourd'hui, la Grande Débâcle n'est plus qu'un souvenir; alors qu'au moment du naufrage du Napoléon, et pendant des années par la suite, c'était un chauchemar pour ceux qui possédaient des navires ou des propriétés sur les rives du Saint-Laurent.

transcan



It's now officially called the Transport Canada Building. Early this spring it was announced that Ministry of Transport headquarters in Place de Ville, formerly Tower 'C', would henceforth be known as the Transport Canada Building.

Voilà c'est fait, on le désigne maintenant sous le nom d'immeuble Transports Canada. Tôt ce printemps, on avait annoncé que les quartiers généraux du Ministère des Transports communément appelé Tour 'C', porterait désormais le nom d'immeuble Transports Canada.

EAST AFRICAN STUDENTS GRADUATE AFTER ATC TRAINING

Thirty students from East Africa were presented with diplomas by W.H. Huck, Administrator of the Ministry of Transport's Air Administration, after completing one year's training across Canada in Air Traffic Control techniques.

Representatives from Uganda, Tanzania and Kenya; the Air Traffic Controllers Association, the Canadian International Development Agency and the Ministry of Transport attended the ceremony. Thirteen of the students were from Uganda, eleven from Tanzania and six from Kenya.

The students spent 500 hours in classroom work and another 100 hours in Air Traffic Control simulators. Each student spent two months at an ATC facility in Kelowna, British Columbia, or Saskatoon or Regina, Saskatchewan, or Thunder Bay or North Bay, Ontario.

The students will now return to their own countries to participate in Air Traffic Control programs.

GRADUATION D'ETUDIANTS AFRICAINS APRES SESSION D'ENTRAINEMENT DE L'A.C.T.A.

Trente étudiants originaires de l'Afrique de l'est se sont vus décerner des diplômes par Monsieur W.H. Huck, directeur à l'Administration de l'air, au ministère des Transports. Les étudiants ont suivi un cours de 12 mois au Canada dans le domaine du contrôle du trafic aérien.

Lors de la cérémonie de graduation, on pouvait remarquer des représentants de l'Ouganda, de la Tanzanie et du Kenya, de l'association des contrôleurs du trafic aérien, de l'Agence de Coopération Internationale et du ministère des Transports.

Treize des étudiants étaient originaires de l'Ouganda, onze de la Tanzanie et six du Kenya.

Les étudiants ont accumulé cinq cents heures de cours théorique et mille heures de cours pratique sur des simulateurs de contrôle aérien et sur des ordinateurs. Durant leur entraînement, les étudiants ont séjourné pour une période de deux mois dans un des endroits suivants: Kelowna en Colombie Britannique, Saskatoon ou Régina en Saskatchewan, Thunder Bay ou North Bay en Ontario.

Les étudiants sont maintenant rétournés dans leur pays d'origine afin d'exercer leurs fonctions de contrôleurs aériens.



Thirty students from East Africa recently graduated from a year's course across Canada in Air Traffic Control techniques.

Trente étudiants venant de l'Afrique de l'Est ont récemment gradué après une année de cours dispensée à travers le Canada sur les techniques de contrôle du trafic Aérien.

SUGGESTION AWARD PROGRAM

The objective of the Suggestion Award Program is to effect economies in the Public Service by granting monetary awards for improvements submitted by employees.

Suggestions may be submitted to the Suggestion Award Administrator for your division on the forms available from your supervisor, but you do not have to use a form to submit a suggestion.

During the 1973-74 fiscal year, 239 suggestions were adopted from those submitted by employees of the Air Administration for a total of $27,000 in awards. These suggestions led to savings of $415,389.

To help would-be participants in the Suggestion Awards program, we suggest:

— Concentrate on what you know best when making a submission,

— Pick a situation you think needs improvement,

— Analyze the facts and consider all possible solutions,

— When you prepare your suggestion, describe it fully and describe its benefits,

— You may want to attach pictures or diagrams,

— Check with your supervisor before submitting your suggestion. This may improve the clarity and substance of the suggestion,

— Send in your suggestion and it will be reviewed by the Suggestion Award Committee who make the final decision on submissions.

PROGRAMME DE PRIMES A L'INITIATIVE

Le programme de Primes à l'Initiative a comme objectif d'accroître les économies dans les différents services de la Fonction publique, en incitant les employés à faire des suggestions qui peuvent leur valoir d'intéressantes récompenses monétaires.

Les suggestions peuvent être soumises à l'Administrateur du programme de Primes à l'Initiative de votre division. Le surveillant de chacune des sections a en main des formulaires spécialement prévus à cet effet. Les suggestions peuvent aussi être faites sans ces formulaires.

Au cours de l'année 1973-74, 239 suggestions soumises par les employés de l'Administration de l'Air ont été acceptées. Les montants distribués en primes se sont élevés à $27,000., permettant des économies de $415,389.

Pour aider ceux d'entre vous qui penseraient soumettre une suggestion, nous vous proposons:

— de vous concentrer sur un sujet que vous connaissez bien;

— de choisir un élément où une amélioration peut être apportée;

— d'analyser les faits et de prendre en considération toutes les solutions possibles;

— de bien décrire la solution proposée et tous les bénéfices en découlant;

— d'y joindre illustrations et diagrammes, si possible;

— de consulter votre surveillant, qui peut vous aider à mieux présenter votre suggestion;

— de faire parvenir votre suggestion au Comité des Primes à l'Initiative, qui prendra la décision finale.

SUGGESTION AWARDS

Mr. John Wilton, Vancouver, B.C. $245.00

Miss Madeleine Lasnier, Montréal, Québec $200.00

Mr. Allan Smith, Ottawa, Ontario $150.00

Mr. Lloyd Richards, Ottawa, Ontario $150.00

Mr. Vernon Hardingham, Albert Bay, B.C. $150.00

Mr. André Desbien and Mr. Ubald Christin, Hauterive, Québec $175.00

Mr. Gary Glass, Winnipeg, Manitoba $100.00

Mr. Gurmey Beal, Salisbury, New Burnswick $100.00

Mr. Douglas Leblanc, Ottawa, Ontario $ 85.00

Mr. Roland Saulnier, Montréal, Québec $ 80.00

Mr. Paul Britton, Halifax, Nova Scotia $ 75.00

Mr. Donald Staff, Port Hardy, B.C. $ 75.00

Mr. Serge Gagné, Sept-Iles, Québec $ 60.00

Mr. William Waybourne, Vancouver, B.C. $ 60.00 & $ 50.00

Mr. Jean-Claude Tremblay, Fort Chimo, Québec $ 50.00

Mr. William Nickel, Ottawa, Ontario $130.00

Mr. Sam Sirna, Victoria, B.C. $100.00

Mr. Francis Ryan, Ottawa, Ontario $100.00

Mr. Gaston D'Entremont, Lavernière, Québec $ 75.00

Mr. Ian Muir, Saskatoon, Saskatchewan $ 75.00

Mr. Gordon Cudlipp, Winnipeg, Manitoba $ 75.00

SUGGESTION AWARDS

Roger Stewart of Ottawa received a Suggestion Award of $500 for proposing the discontinuation of the C7 Maintenance and Operations manual at Canadian airports.

D. R. Reid of Richmond, British Columbia, received a supplementary award of $300 to add to his previous award of $650.

PRIMES A L'INITIATIVE

M. Roger Stewart d'Ottawa, a reçu la somme de $500. pour avoir proposé de cesser la publication, dans les aéroports canadiens, du manuel "C7" traîtant de l'entretien et des opérations.

M. D.R. Reid de Richmond, en Colombie Britannique, a reçu un supplément de $300. à une prime de $650. qu'il s'est récemment méritée.

Transport Minister Jean Marchand and W.R. Fleming, 1974 Chairman of National Transportation Week, presented certificates of merit to six outstanding members of Canada's "Transportation Family" during opening ceremonies for National Transportation Week '74 on Parliament Hill. Certificates were presented to Allan Donaldson of Armbro Transport Limited; Victoria Butler of CP Air, Captain Adrien Gallant of the Canadian Coast Guard, Basil Collings of CP Rail, Captain Jack Jones of Air Canada and Tomas Miller of CN Rail. Also present for the ceremony were NTW '74 Vice Chairmen David Trudeau and Mel Beaupre.

Sur la colline parlementaire, lors de la cérémonie d'ouverture de la Semaine nationale des Transports 1974, le ministre des Transports M. Jean Marchand, et le président de la Semaine nationale des Transports pour 1974, M. W.R. Fleming ont présenté des certificats de mérite à six membres de la grande famille des Transports.
Les personnes honorées ont été: M. Allan Donaldson de Ambro Transport Limitée, Mlle Victoria Butler de CP Air, le Capitaine Adrien Gallant de la Garde cotière canadienne, M. Basil Collings de CP Rail, le Capitaine Jack Jones d'Air Canada, et M. Thomas Miller du Canadien National.
Lors de cette cérémonie, on pouvait aussi remarquer la présence des vice-présidents de la Semaine Nationale des Transports 74, M. David Trudeau et M. Mel Beaupré.





A new terminal for Sudbury Airport, part of a $1.8 million improvement program, was officially opened recently. The new terminal will accommodate 150 people in its waiting area. Ministry of Transport personnel were responsible for architectural, electrical, mechanical and structural design of the building.

On a procédé récemment à l'ouverture d'une nouvelle aérogare à l'aéroport de Sudbury. Cette nouvelle structure à été construite à même les fonds d'un programme de 1.8 million prévus à cet effet. La salle d'attente de la nouvelle aérogare peut accomoder 150 personnes à la fois. Les employés du ministère des Transports se sont chargés lors du projet, de l'architecture, de l'aménagement d'ensemble, et des installations techniques et mécaniques.

RETIREMENTS

Marcel Leroux, Regional Supervisor, Emergency Services, Quebec Air Region, has retired after thirty years of service with the Ministry of Transport. Before his appointment as Regional Supervisor, Mr. Leroux was Fire Chief at Montreal International Airport.

Three employees retired recently from the Saint John Marine Services Base. Lemuel Greenwood has retired after 30 years with the Ministry of Transport, while Henry d'Entremont has retired after 27 years of service, and Addison Naves after 14 years with the Ministry.

RETRAITE

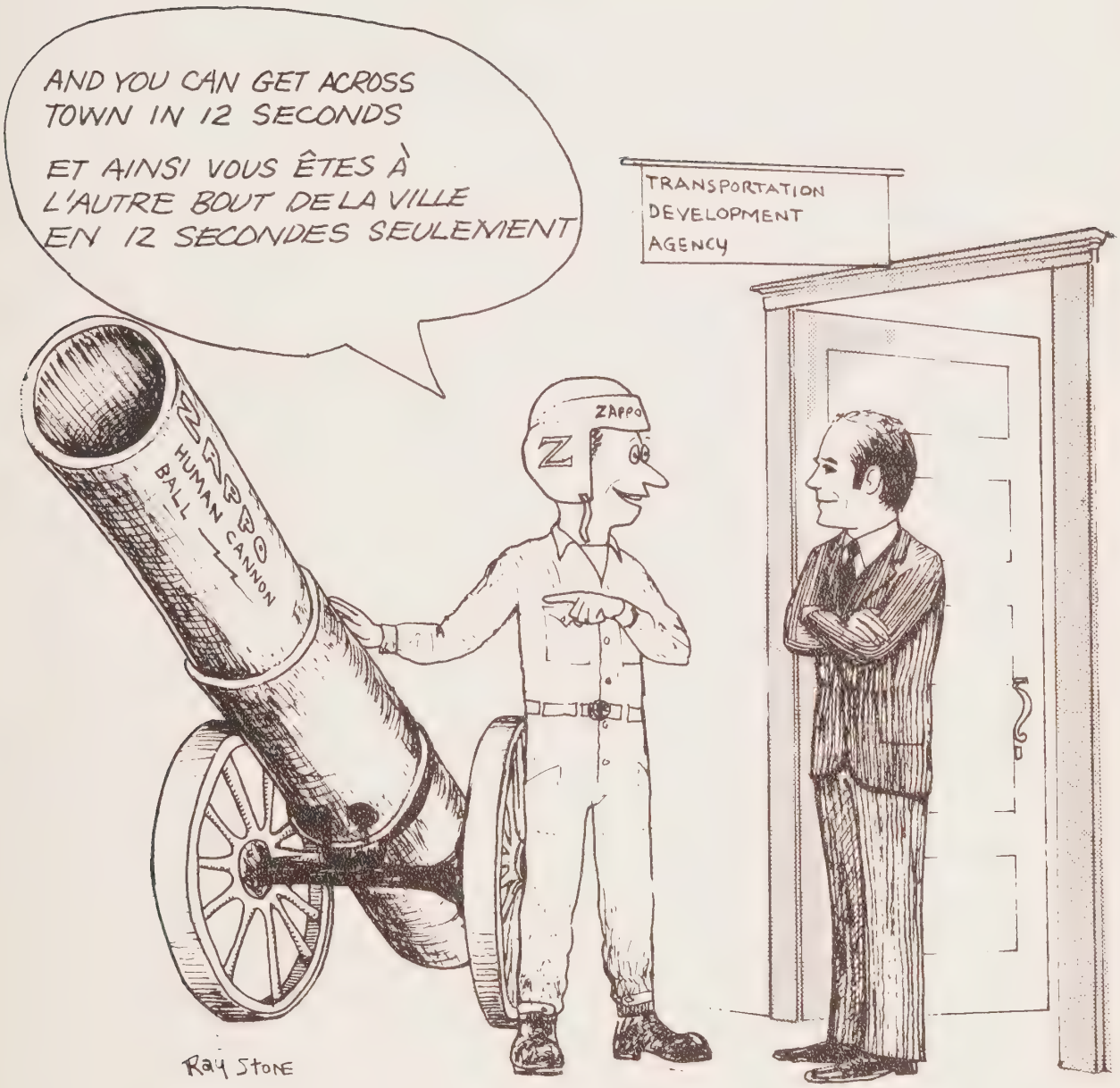
M. Marcel Leroux, superviseur régional, Services d'urgence, pour la région aérienne du Québec, prend sa retraite après 30 ans de service au ministère des Transports. Avant sa nomination au poste cité, monsieur Léroux était chef du service d'incendie à l'aéroport international de Montréal.

Récemment, trois des employés de la base de la marine de Saint-Jean au Nouveau-Brunswick ont pris leur retraite. M. Lemuel Greenwood a pris sa retraite après 30 ans de service au ministère des Transports, alors que M. Henri d'Entremont s'est retiré après 27 ans, et M. Addison Naves après 14 ans.



J.I. Carmichael, former Director General of Management and Administrative Services for the Ministry of Transport, and Mrs. Carmichael, admire a gift presented to Mr. Carmichael in recognition of his service with the Ministry. Mr. Carmichael has taken up new duties with the Energy Supplies Allocation Board.

Monsieur J.I. Carmichael, ex-directeur général des services de gestion et d'administration au ministère des Transports, et Madame Carmichael semblent apprécier le présent offert à M. Carmichael en reconnaissance de ses années de service au ministère. M. Carmichael est déjà en fonction à son nouveau poste, dans un autre ministère.


AND YOU CAN GET ACROSS TOWN IN 12 SECONDS
ET AINSI VOUS ÊTES À L'AUTRE BOUT DE LA VILLE EN 12 SECONDES SEULEMENT
TRANSPORTATION DEVELOPMENT AGENCY
ZAPPO
HUMAN CANNON BALL
Ray Stone

An Air Canada DC-8 passes over a radar antenna system at Ottawa International Airport. The antenna system functions as primary and secondary radar for incoming and outgoing aircraft.

On voit ici un DC 8 d'Air Canada survoler des antennes radars à l'aéroport International D'Ottawa. Ces radars primaires et secondaires servent à diriger les aeronefs au départ et à l'arrivée.

Cover Photo by Gordon Thomas
Photo Couverture de Gordon Thomas



Transport Canada Transports Canada

transport canada

july/august 1974 juillet/août

CAI T 15
T 61



COVER PHOTO:

Heading north *CCGS d'Iberville* and *CCGS John A. Macdonald* on Arctic resupply.

Ministry of Transport photo

PHOTO COUVERTURE:

Les *NGCC d'Iberville* et *John A. Macdonald* à destination du grand nord, en mission d'approvisionnement.

Photographie du ministère des Transports

transport canada

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CONTENTS/SOMMAIRE

Transportation Council Message
Message du Conseil des Transports 3

Five Russian Railwaymen in Search of the Canadian Winter 4

Nos Gars de la Côte-Nord 7

Along the Mackenzie 10

Coast Guard College Graduation
Graduation au Collège de la Garde Cotière 12

Salute to Aviation 16

Our First Ship on the Pacific 17

Revolution dans le Classement de documents 20

Bravery Medals for NHB Policemen
Médailles de bravoure pour des policiers des Ports Nationaux 21

Road and Motor Vehicle Conference 22

Transcan 23

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transportation council / conseil des transports


Hon. Jean Marchand


O.G. Stoner


J. Guay


E.J. Benson


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Mel Hagglund


W.H. Huck


Robert Turner


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J.Y. Clarke


W.F. Nelson


M.E. Butler


Guy Lavigueur


Del Taylor

message

With summer days upon us again, it is the time of year when we work shorter hours and can appreciate more the bounties of life. But behind the scenes, there is much to do. Planning never stops at MOT and we must constantly plan for the future by defining new policies to keep abreast of these rapidly changing times.

Our search for answers to the problems we face is not an easy task. We must ensure that the Canadian people are both tuned in and tied in to our development policy through public participation.

Planning for the future also requires us to step back occasionally and take stock of our decisions and see whether they meet our national objectives of evolving a transportation policy that meets and is compatible with the aspirations of the people of Canada.

This means giving each Canadian the means to travel where and how he wants to in the safest and most economical way. We have to be efficient. We have to be flexible and we need a choice range of services.

At the same time, we have to work closely with the territories and provincial governments. We also have to consider the social aspects of any new transportation policy. This means that any decisions involving not only dollars but manpower, materials and machinery and their impact on the Canadian economy being reflected in such factors as employment, incomes and prices, have to be carefully studied.

But working together as a team, I am confident we can do the job.



G.A. Scott

Avec l'été, c'est le temps de profiter des bienfaits de la nature et d'amputer un peu la longueur de nos journées de travail. Cependant, la besogne demeure là...toujours importante et volumineuse! Ça n'arrête jamais au ministère des Transports. Nous devons constamment travailler en prévision du futur, en définissant sans cesse de nouvelles politiques afin de faire face au rythme accéléré du développement de la vie moderne.

Il n'est pas facile de trouver les meilleures réponses aux problèmes qui nous assaillent. Nous devons nous assurer que la population du Canada s'intéresse et participe activement à nos politiques de développement.

Nos plans pour l'avenir exigent que de temps en temps nous prenions du recul afin d'analyser nos décisions passées et de nous rendre compte si vraiment elles répondent aux objectifs nationaux d'une politique de transports qui doit respecter les aspirations des citoyens.

Cela veut dire, fournir à chaque Canadien les moyens de voyager de la façon la plus sûre et la plus économique possible, là où il le désire et quand il le désire. Nous devons être efficaces, tout en demeurant souples sans pour autant oublier que nous devons sans cesse offrir tout un choix de services.

En même temps, nous devons travailler en étroite collaboration avec les gouvernements régionaux et provinciaux. Nous devons continuer à prendre en considération toutes les implications sociales de nos nouvelles politiques des transports. Ceci veut dire que nous devons non seulement considérer l'aspect coût, mais aussi le côté matériel et le côté humain, afin de comprendre la portée ultime de nos décisions sur l'économie et la vie nationale.

Je suis certain que l'équipe que nous formons peut réussir à la tâche.

The March-April issue of TRANSPORT CANADA carried an article about a recent visit of Canadian railway specialists to observe the operation of the Soviet railways under winter conditions. In March a delegation of Soviet railwaymen paid a return visit to Canada to observe Canadian railways under similar conditions.

The leader of the delegation was A.F. Podpaly, Deputy Minister of Railway Transport. He was accompanied by Y.I. Zhitinev, Deputy Chief of the Moscow Railway, K.S. Isayev and V.B. Korsh of the Central Railway Scientific Research Institute in Moscow, and B.E. Lukov, Engineer of the International Communication Department of the Ministry of Railway Transport.

The delegation had its first taste of the unpredictability of the Canadian winter when a snowstorm diverted their flight from Montreal to Toronto, causing a very hurried rearrangement of the first part of the visit with Canadian National Railways organizing an excellent program in Toronto on very short notice.

From Toronto the group made a brief side trip to Niagara Falls (taking the opportunity of discussing railway problems with the train crew) before taking the CN Turbotrain to Montreal. The rest of the time was spent with Canadian National and CP Rail in Montreal with the exception of a one day visit to Ottawa where the delegation visited the National Research Council.

During the visit to Ottawa, Mr. Podpaly met with Deputy Transport Minister O.G. Stoner, and attended a reception in the Chateau Laurier which was hosted by CTC Chairman, Hon. E.J. Benson.

Mr. Podpaly kindly consented to prepare an article on his impressions of Canadian railways.

FIVE RUSSIAN RAILWAYMEN IN SEARCH OF THE CANADIAN WINTER

BY

A.F. PODPALY

DEPUTY MINISTER OF RAILWAY TRANSPORT

UNION OF SOVIET SOCIALIST REPUBLICS

During March, 1974, a delegation of Soviet railway experts came to Canada to examine various aspects of Canadian railway operations. The railways of our two countries have many problems in common and we feel that we have much to gain by cooperating, to help to solve some of these problems.

The conditions under which Canadian railroads operate, especially climatic conditions, are in many aspects similar to those of the Soviet Union. In both countries the railways carry some two-thirds of the total volume of traffic, and they are the main mode of freight transport. It is because of these similarities that a mutual study and exchange of opinion on certain features of current and planned railway operation may be highly beneficial to both countries.

We found that the track, terminal structures and equipment are all maintained in good

condition. Of particular interest to us were the efforts to increase the strength of the track superstructure by the use of welded rails with reinforced concrete ties. This is very promising and deserves attention. One particular problem common to both Canadian and Soviet railroads is the battle against frost heaves. Canadian experience in the use of salt to combat such heaving is of great interest to us.

In the field of snow-clearing technology, I feel that our railways are equipped with more productive equipment such as electrical triple-motor snow blowers and snow removal machines. These machines are very useful in cramped yards because they clear the tracks of snow and transport it to dumps. We were very interested in the new Canadian pneumatic equipment which keeps switch points clear of snow and ice by means of hot and cold air.

The work that is going on at the National Research Council's cold weather research laboratory was also very interesting. We were pleased to see the demonstration of track maintenance equipment, especially the tamping, tie-replacing, rail cutting and hole drilling machines but, on the whole, the track maintenance system and the equipment used on the Soviet railways to carry out track maintenance differs significantly from that used in Canada and seems to be more efficient. One of the reasons for this is that many of our lines have a very high freight traffic density and it is necessary to use a complex of highly efficient machines which, within the space of four to five hours, will completely replace a one and a half to two kilometre section of track.

Both the Canadian and the Soviet railways are in the process of applying computer technology to railway operation and control, an area in which great improvements in efficiency can be achieved. Canadian railways are well advanced in this field, particularly in the "Tracs" system

---

The U.S.S.R. Deputy Minister of Railway Transport, A.F. Podpaly (second from right) inspects a tie plug inserter at the Canadian National Danforth Shops in Toronto.



which employs modern technology and terminal equipment. This system, which operates in real time, makes it possible to develop extensive information on train and car movements and assists greatly in empty car distribution. The results which have so far been obtained on Canadian railroads will assist greatly in the development of an even more extensive use of computer technology in the future automation of railway control systems.

The construction of the Toronto hump yard with its well developed track layout will ensure reliable service for some time to come. At the same time, we noticed that cars seem to spend an undue period of time in the yard. In the Soviet Union the car classification yard time is significantly less, and a more efficient use of the car fleet has been achieved as a result of speeding up car turn-arounds.

The use of boosters coupled to Canadian yard locomotives was of great interest to us. These improve starting conditions, especially in winter, without the need for either additional or more powerful locomotives.

The system of locomotive maintenance differs somewhat between the two countries, particularly in the smaller number of types of maintenance and the increased period between maintenance carried out in Canada. We are now aware of the differences between the two systems and we must now evaluate the advantages and shortcomings of the respective systems. We were particularly interested to see the Canadian National Testing Unit which automatically identifies faults in diesel locomotive electrical systems.

We noted the effective use which is being made of multiple grade oils for rolling stock. These do not require seasonal changes which decrease the cost and simplifies the preparation of locomotives and cars for winter operation.

We very much enjoyed our rides on Canadian diesel and turbo trains. The turbo train may turn out to be a promising form of traction for high speed travel on non-electrified lines. In the Soviet Union, however, there is a large network of electrified trackage and most of our attention is directed towards the development of high speed electric trains designed to operate at speeds up to 200 km/hr.

On behalf of the Soviet delegation, I would like to express my thanks to the officials of the Ministry of Transport and also the Canadian railways for the opportunity to study winter railway operations, and also for their very kind hospitality.

Deputy Minister Podpaly (left) was accompanied by John Galvin of the Railway Branch (Surface Administration) during an inspection of the National Research Council's cold weather research laboratory.



This tamping machine was one of the many pieces of maintenance of railway equipment that was demonstrated to the delegation while in Toronto.



NOS GARS DE LA CÔTE NORD

PAR NORMAND HÉROUX
RÉDACTEUR FRANÇAIS

La journée où monsieur Raynald Imbeault s'installa à Sept-Iles, il était certain qu'il s'établissait dans une communauté du Sud. Une telle idée peut sembler farfelue au premier abord...cependant, quand on sait que précédemment il avait habité le grand nord du Canada, on peut mieux comprendre... Audjourd'hui, il est, dans cette ville de la Côte Nord, gérant de l'aéroport pour le compte du ministère des Transports.

Sept-Iles se trouve au-delà du cinquantième parallèle,à 800 km. aérien au nord-est de Montréal (500 milles) sur les bords du St-Laurent, qui déjà n'est plus fleuve mais golfe. Le décor naturel est magnifique! des plages sans fin...la mer parsemée d'îles...la ville construite au fond d'une baie...et l'aéroport flanqué sur une falaise dominant la mer, à 11 km. de la ville (7 milles).

Sept-Iles compte près de quarante milles habitants mais on parle déjà du jour où elle en contiendra soixante-quinze milles. On y parle aussi travail, construction, expansion, développement, aménagement, investissement; et encore loisirs, vacances, amusements. La vie s'y déroule à un rythme effréné...les distances n'existent pas...les difficultés ne sont jamais insurmontables...chacun a sa place.

Nécessité d'importance majeure pour une telle communauté et la région environnante: l'AÉROPORT.

C'est là qu'on arrive pour venir construire et c'est par là qu'on sort pour s'évader un peu.

Construit en 1942 par le ministère de la Défense, dans le cadre des mesures de défense du temps de la guerre, l'aéroport fut pris en charge par le ministère des Transports en 1946. Ainsi, ce dernier a été non seulement témoin, mais aussi artisan du développement de cette vaste région et de sa métropole. Aujourd'hui sous la direction de M. Imbeault, plus de 45 personnes y oeuvrent pour le compte du ministère.

Le progrès n'arrête pas de marquer la vie quotidienne de nos gars; l'an prochain on procède à la construction d'une nouvelle aérogare de $7 millions. Voilà un projet emballant et l'ampleur du travail à accomplir ne fait pas peur... M. Imbeault se sent de taille à participer à ce nouveau développement. Originaire d'Amqui, il a 29 ans, est dynamique et, par surcroît, expérimenté. Ses études primaires et secondaires n'ont été qu'une suite d'années 'sautées'. A quinze ans, avec des résultats pas trop mal, pour employer son expression, il pouvait se présenter à l'université de Sherbrooke avec des notes de premier de classe. En 1963, il entreprenait une carrière au service du ministère de

L'aérogare de l'aéroport de Sept-Iles. Contruite en 1955, agrandie en 1965, elle sera remplacée en 1975, par une nouvelle située juste à côté.



l'Environnement. Son travail l'amena à accrocher son chapeau à des endroits aussi peu populaires pour les vacances que l'Ile de Sable, Fort Chimo, Inoudjouac, Frobisher Bay, Eurêka. Une fois parvenu aux limites où le Nord perd son nom, il vint dans le Sud pour étudier et occuper divers postes à Ottawa, Montréal et Sept-Iles.

En août 1973, il fut choisi, à la suite d'un concours du ministère des Transports, pour occuper le poste qu'il détient actuellement. Ses compétences sont nombreuses et ses connaissances en divers domaines impressionnantes. C'est ainsi par exemple, qu'au cours de son séjour à Eurêka en plus d'exercer ses fonctions de chef de service, il assumait les obligations de médecin,d'agent de préservation, de shérif, d'officier des douanes, de maître de poste et de mécanicien...

M. Imbeault fait partie d'une nouvelle génération de directeurs d'aéroports qui n'ont pas été pilotes de guerre avant d'occuper leur fauteuil actuel. Il faut pour remplir un tel poste avoir une bonne connaissance des fonctions que l'on doit contrôler et s'y connaître en administration. M. Imbeault aime son travail, les gens qui l'entourent et les particularités de la région où il habite.

Tous les matins, à 8:30 il répond au bonjour de sa secrétaire, Mlle Claire Massé, toujours présente au poste quelques minutes avant la mise en branle des opérations quotidiennes. Déjà l'aéroport grouille d'activité...Depuis 7:30 les vols d'arrivée et de départ s'entrecroisent: Havre St-Pierre, Wabush, Schefferville, Montréal, Québec, Gaspé, Rimouski, Bagotville...C'est Air Canada et Québecair dotés de leurs DC9 et BAC 1-11, puis Air Gaspé et les Ailes du Nord, ainsi que les flottes des compagnies privées de la région. C'est un va-et-vient continuel.

A Sept-Iles, on prend l'avion comme on prend l'autobus dans d'autres villes. Il n'est pas rare de voir les passagers se présenter à l'aéroport sans réservation, acheter leur billet au guichet, et partir...Les fins de semaines, particulièrement, on voyage beaucoup: partie de hockey à Montréal, magasinage à Québec, visite à des amis au Saguenay-Lac St-Jean, ou à des parents en Gaspésie...les chasseurs et pêcheurs y viennent depuis le Sud du Canada et des Etats-Unis. En 1973, plus de 200,000 personnes sont passées par l'aéroport de Sept-Iles et les chiffres augmentent en flèche à chaque année.

S'il est un homme dans cet aéroport qui peut vous parler de l'utilité et de l'importance de l'avion dans cette communauté, c'est M. Robert Bujold, surintendant à l'entretien des bâtiments et des installations.

Il occupe un poste au service du ministère des Transports à l'aéroport de Sept- Iles depuis le milieu des années '40, ce qui lui vaut d'être l'historien de l'aéroport. Il peut vous renseigner sur cette époque de pionniers où la région a connu une euphorie d'Eldorado. On a construit au cours des années '50, la ville de Schefferville et un chemin de fer avec du matériel et de la main-d'oeuvre expédiés par la voie des airs."Il est facile de comprendre que dans une communauté comme la nôtre, l'aéroport ait une importance si grande. Les citoyens de la région voyagent par avion au moins trois fois plus que les habitants de l'ensemble du reste du pays."

Homme de progrès, M. Bujold se dit heureux de pouvoir encore participer l'an prochain au projet de développement que le ministère réalisera en construisant une nouvelle aérogare. Depuis 1946 que le ministère s'occupe de l'aéroport, M. Bujold a vu chaque nouvelle amélioration...en 1955, c'était la construction de l'aérogare...puis en 1965, on agrandissait. Actif dans la vie communautaire de la ville, M. Bujold demeure, à l'instar de M. Imbeault, conforme à l'image dynamique du fonctionnaire public moderne.

Dans un milieu aussi marqué par l'évolution, on peut penser que les problèmes sont nombreux. En rencontrant monsieur Yvanhoe Philippe, surintendant de l'exploitation, depuis 19 ans au service du ministère et bras droit de M. Imbeault, il nous confie qu'il n'y a pas vraiment de problèmes mais plutôt des solu-

tions. C'est cette disposition d'esprit qui fait qu'on peut se permettre de suivre le rythme accéléré de l'évolution que connaît ce milieu. A son poste depuis la même période de temps que M. Imbeault, M. Philippe travaillait auparavant à Fort Chimo. Il fait ici partie de l'équipe de la direction. L'atmosphère de travail créée par ces chefs favorise une communication directe entre employeurs-employés. Toujours à l'affût de nouvelles méthodes administratives, techniques ou humaines susceptibles d'améliorer la bonne marche de l'aéroport, le personnel cadre est reconnu comme très avenant, bien au-delà des frontières immédiates de leur milieu géographique de travail.

Sur les terrains de l'aéroport, du côté Est, se trouvent les édifices qui abritent les ateliers de mécanique, de menuiserie et d'électricité, ainsi que les services de secours. Ces derniers, dotés de l'équipement le plus moderne, sont dirigés par monsieur Pierre André Corbeil, jeune immigrant de Lachute, qui apprécie beaucoup les joies de la Côte Nord, mais qui ne peut s'empêcher de penser avec une certaine nostalgie aux activités abandonnées dans l'Outaouais-Laurentides. Le rôle de M. Corbeil, et de ses aides, est de voir à la prévention d'accidents aussi bien que de fournir les secours nécessaires en cas d'urgence.

Les quartiers généraux de son service sont d'une propreté bien militaire, comme toute l'aérogare d'ailleurs. Durant l'été, pour maintenir les terrains aussi attrayants que possible, ils embauchent cinq étudiants, qui sont aussi chargés de l'entretien.

Au second étage de l'aérogare, se trouve le service des télécommunications (TELECOM) avec, à sa tête, monsieur Dick-G.S. Bowness, ex-insulaire de l'Île du Prince Edouard. Dick est à Sept-Iles depuis...depuis si longtemps qu'il ne pense pas en repartir... enfin pas pour le moment, quoiqu'il soit sur le point de prendre une retraite bien méritée.

Encore un escalier plus haut et voilà les bureaux de monsieur Pierre Sylvain, chef du service du contrôle du trafic aérien. Il aime son travail et n'est embarrassé par aucune situation. Voir à la sécurité aérienne est une tâche harassante et qui requiert une attention de tous les instants. C'est pour lui un défi auquel il aime se mesurer. Son service, il va sans dire, fonctionne toujours au bon pas. En plus des activités quotidiennes, il s'occupe de voir à l'entraînement et à la formation de jeunes novices dans le domaine du contrôle aérien. Il reçoit des étudiants et des étudiantes en stage.

Les employés du ministère dans ce coin donnent l'impression d'être dans une nouvelle Amérique à l'intérieur de l'Amérique! Tout est à construire, tout est à faire, et les idées nouvelles foisonnent. Vous leur parlez de l'aérogare dont on entreprendra la construction l'an prochain, vous les verrez stimulés par le défi que cela représente.

A gauche, M. Raynald Imbeault, directeur de l'aéroport de Sept-Iles, discute avec M. Robert Bujold, surintendant des bâtiments et installations.



Que ce soit dimanche ou lundi, on n'est jamais seul à attendre un départ ou une arrivée.



ALONG THE MACKENZIE

BY BILL ALMOLKY
REGIONAL PUBLIC AFFAIRS OFFICER,
WESTERN REGION



CCGS Eckaloo on the Mackenzie River.

Our Cessna 180 flew low, following the twisting, turning Mackenzie River. From a few hundred metres, the hazards to ships navigating the river are obvious: silt deposits, clumps of vegetation and river bottom are clearly visible a few metres below the water or breaking the surface.

The Mackenzie is like that for much of its 1,760 kilometres (1,100 miles) as it slices northwest to southeast through the western portion of the Northwest Territories. From its delta at the Beaufort Sea and the communities of Tuktoyaktuk, Aklavik and Inuvik, to Hay River on the southwest shore of Great Slave Lake, it is a challenge to navigators.

Occasionally, the Mackenzie widens to form a good sized lake (with water as deep as 27 metres (90 feet)) but much of it is a narrow, shallow, muddy brown stream, whose sometimes sluggish, sometimes swift waters pose special problems for the shipping companies who must resupply northern, remote towns and settlements during the summer shipping season. And it is in summer that the river is particularly shallow, often as low as 1.5 metres (5 feet).

Ensuring that river navigation is safe and reliable is the job of the Hay River Marine Services District, one of three districts (Prince Rupert and Victoria are the other two) under the jurisdiction of Marine Services Western Region in Vancouver. The Vancouver regional office, in turn, is one of the regions responsible to the Canadian Marine Transportation Administration in Ottawa.

The Hay River district's headquarters is in the town of Hay River, under the direction of Harry Dubinsky, the district manager. We had arranged for the Cessna to rendezvous with the *CCGS Eckaloo* 480 kilometres (300 miles) up river from Hay River. The *Eckaloo* is employed repositioning buoys cached on shore prior to freeze-up and "relighting" beacons which have been extinguished for the winter when all navigation stops.

My guide was Jim Doherty, the district's operational superintendent, a former deep water sailor from Moncton, N.B. "It's a completely different situation up here," he said. "We have very special problems in northern navigation which require special solutions".

A look at a map confirms what may be an understatement: The Hay River district is vast. It includes Northern Alberta and Saskatchewan, and all of the Northwest Territories from the Alaska Boundary through to the Boothia Peninsula (which is due north of Churchill,

Manitoba) an area of approximately 3.4 million square kilometres (1.3 million square miles).

During the season, four coast guard vessels including *Eckaloo,* a helicopter and an ice breaker out of Vancouver work long hours to place, check and recheck and finally retrieve navigational aids before freezeup.

There was no interruption because of our arrival. Even as we were securing the float plane near *Eckaloo,* the crew of nine under Captain Gordon Swanson continued their work. Using the vessel's bow crane, they hauled and lifted buoys and the heavy boulders to anchor them from where they had been cached on shore prior to freezeup. It's not just a matter of placing the buoys where they were the previous season: Captain Swanson used *Eckaloo*'s depth sounding equipment to "read" the river bottom because it is constantly changing and new channels have to be determined.

Eckaloo, her sister ships, the helicopter and the ice breaker now service more than 2,700 navigational aids throughout their district. All must be checked at least twice a year, others at least twice a week since ice and driftwood and log jams often carry buoys and markers with them.

The aids vary and include: 68 radar beacons which reflect a radar signal back to a ship so the vessel can "fix" its position; 1,450 day beacons on shore to mark channels; 230 directional or omnidirectional lighted beacons which mark hazardous areas or allow ships to take bearings ("lighting" them involves replacing batteries and a photo-electric cell); 21 light buoys (on water and similar to the shore light beacons); 925 unlit buoys with special reflective tape for day and night guidance (all vessels carry and use search lights); and 11 racons, a radar transmitter mounted on a tower and which is triggered by a ship's radar. The racon sends the signal back to the ship in the form of a code containing vital information which is displayed on the ship's radar. Racons are used especially in critical areas where channels are shallow and along the Arctic Coast.

The helicopter used by the Hay River district, a Bell Jet Ranger, looks after all aids on Great Bear Lake and assists throughout the whole region. Its payload is only 238 kilograms (530 pounds). Mr. Dubinsky hopes to have it replaced with a Bell 212, which can carry 2,250 kilograms (5,000 pounds). The helicopter is particularly effective in lifting construction materials to the sites.

A new Coast Guard 836 metric-ton (850-ton) dual-draft vessel is being completed in Vancouver for river and Arctic coast work. Unlike the other vessels, she will sail under her own power from Vancouver to the Mackenzie. By flooding special tanks with water or fuel, she draws 2.2 metres (7 1/2 feet) for deep water (Arctic) operations. For river work she draws about 1.4 metres (4 1/2 feet).

For the *Eckaloo*'s crew and for crews of the other coast guard vessels, the 12-hour days are long and hard. They will be on the water for two to three weeks at a stretch and warmer temperatures also bring the unrelenting swarms of blackflies and tenacious attacks of mosquitoes. The navigation season varies, depending on the area, but operations normally begin about May 20 and end about October 20.

District operations superintendent, Jim Doherty, often uses small aircraft to transport him over his vast area of operations.



The crew of the *Eckaloo* use the ship's crane to place a boulder that is used to anchor river buoys in the river.



COAST GUARD COLLEGE GRADUATION

Sure enough, it rained. Shortly after lunch a cold, light mist fell on the recently repainted bright red and white building. No one at the Coast Guard College in Sydney, Nova Scotia, seemed much surprised, as bad weather, according to some Maritimers, never fails at important events in this part of the country where gentle hills drop into the sea.

On this particular Saturday, in June, the officer cadets of the graduating class had other things on their minds, as it was the last day of their four-year training period at the college. They were about to leave this young institution to embark upon their new careers. For the younger cadets, graduation day '74 marked yet another step in the long and challenging road to becoming an officer in the Canadian Coast Guard. Friends and relatives had gathered in the graduation hall before the arrival of the cadets, who marched in, grouped in two divisions, each flanking the graduating class. The official party followed soon after and the ceremony was under way.

Chaired by Captain Hugh Plant, Director of the College, the ceremony moved briskly, with due attention being paid to the punctilios called for by such an event. After the hand-over of command from the graduating class to the new officer cadets who, next year, will have the responsibility of overseeing their peers, W.A. O'Neil, Deputy Administrator, Canadian Marine Transportation Administration, inspected the graduating class. Trophies and prizes were then presented to the deserving students. Officer Cadet Raymond Pierce of Margaretsville, Nova Scotia, won the Centennial Medal, given each year to the best all-round cadet of the graduating class.

Valedictorian was cadet Daniel Perron of Jonquière, Quebec. He testified to the many difficulties which his fellow cadets had to face

GRADUATION AU COLLÈGE DE LA GARDE COTIÈRE

La pluie était de la fête. Très tôt l'après-midi une bruine agaçante avait enveloppé les vieux bâtiments qui, fraîchement peints en blanc et rouge, reluisaient malgré tout. Personne au Collège de la Garde côtière de Sydney, en Nouvelle-Ecosse, ne semblait surpris du mauvais temps qui, selon certains habitants des Maritimes, est proverbial en ce coin du pays où les collines viennent mourir doucement à la mer.

Les élèves-officiers de la promotion sortante pour qui c'était en ce samedi de juin la journée de la remise des diplômes, avaient, eux, mieux à faire que de se préoccuper du mauvais temps. Après quatre années d'apprentissage, ils s'apprêtaient à quitter cette jeune institution qu'est le Collège de la Garde côtière, pour se consacrer entièrement à leur nouvelle carrière. Pour leurs cadets, cette journée illuminait cette longue route pleine de défis que doit parcourir chaque élève-officier avant d'être breveté. Parents et amis s'étaient déjà rassemblés dans la salle où avait lieu la cérémonie lorsque sont arrivés les élèves-officiers, groupés en deux divisions, chacune flanquant les seize étudiants que comptait la promotion de cette année. Ces derniers furent suivis de près par le cortège des dignitaires.

Sous la présidence du capitaine Hugh Plant, directeur du collège, la remise des diplômes s'est déroulée vivement mais sans négliger pour autant le cérémonial à respecter. Après la passation des pouvoirs aux élèves-officiers qui, l'an prochain, assumeront la direction de leurs confères, M. W.A. O'Neil, l'administrateur adjoint de l'Administration du Transport maritime, a passé en revue la promotion sortante. Trophées et prix ont ensuite été décernés aux étudiants méritants. L'élève-officier Raymond Pierce, de Margaretsville en Nouvelle-Ecosse, s'est mérité la Médaille du Centenaire, offerte à celui de la promotion sortante qui s'est le plus distingué dans tous les domaines.

Dans l'allocution d'adieu qu'il a prononcé au nom de la promotion sortante, l'élève-officier Daniel Perron, de Jonquière au Québec, a

during their stay at the College in the past years, resulting from the growing pains of the young institution.

Capt. W.J.H. Stuart, Director of the Canadian Coast Guard, was guest speaker at the ceremony. He represented Roy Illing, Administrator of the Canadian Marine Transportation Administration. After outlining a number of new concepts emerging in marine transportation systems, Captain Stuart declared: "The Canadian Coast Guard College will play an increasingly important part in the burgeoning marine activity in Canada and let there be no doubt about that." He repeated the Ministry's intention to keep the Coast Guard College in Sydney. In the future, after completing their academic and sea time requirements, Coast Guard officers would spend one year at the new Ministry of Transport Training Institute to be built in Cornwall, undergoing command, staff and advanced technology courses, he pointed out. Capt. Stuart concluded by reviewing present and future plans for the building of Coast Guard ice-breakers.

After the ceremony, visitors had the opportunity to examine the college's classrooms and workshops. Many visited the waterside, where the training vessel *CCGS Mikula*, was moored.

The nine engineers and seven navigators who graduated this year have taken up new duties in Dartmouth, Quebec, Prescott, Parry Sound, Victoria and St. John's.

dressé un bilan des nombreuses difficultés que ses confrères et lui durent affronter au cours de leur séjour au collège, compte tenu des troubles de croissance de la jeune institution.

Le capitaine W.J.H. Stuart, directeur de la Garde côtière, s'est adressé ensuite à l'assistance. Il représentait M. R. Illing, l'administrateur du Transport maritime. Après avoir fait état des nouveaux concepts qui se manifestent dans le domaine maritime, le capitaine Stuart a insisté sur la place prépondérante que le Collège de la Garde côtière assumera dans le cadre du renouveau maritime au pays. Il a réitéré la décision du ministère de maintenir à Sydney le Collège de la Garde côtière. En outre, il a expliqué qu'à l'avenir, après avoir terminé leurs trois années d'étude et leur service en mer, les officiers de la Garde côtière fréquenteraient l'Institut de formation du ministère, à Cornwall en Ontario; en plus d'y acquérir une formation technique spécialisée, ils y étudieront la gestion et l'art du commandement. Le capitaine Stuart a finalement brossé un tableau des projets actuels et futurs de construction de brise-glaces de la Garde côtière devant oeuvrer dans l'Arctique.

Après la cérémonie, les visiteurs ont eu l'occasion de visiter les salles de cours et les ateliers du collège. Plusieurs se sont rendus au quai où était amarré le **Mikula**, le navire à bord duquel s'entraînent les étudiants durant l'année.

Les neuf ingénieurs et les sept navigateurs de la promotion '74 vont maintenant chacun leur chemin. De Victoria à Halifax ils assument dorénavant leurs nouvelles fonctions.

GRADUATES DIPLOMES

Engineers/Machine	Bekkering, Hendrik	Taber, Alberta
	Bingham, Stafford	Victoria, British Columbia
	Brand, Peter	Bolton, Ontario
	Darveau, Marcel	Ste. Foy, Québec
	Henderson, John	Thorold, Ontario
	Keefe, Michael	Winnipeg, Manitoba
	Lenarduzzi, Alan	Trail, British Columbia
	Verwey, Tjeerd	Hamilton, Ontario
	Webb, Roland	White Rock, British Columbia
Navigators/Pont	Cousineau, Marcel	Rougement, Québec
	Goulet, Herman	Sanmaur, Québec
	Perron, Daniel	Jonquière, Québec
	Pierce, Raymond	Margaretsville, Nova Scotia
	Pullen, John	Chester Basin, Nova Scotia
	Tremblay, Germain	Baie Comeau, Québec
	Villemaire, Yves	Montréal, Québec



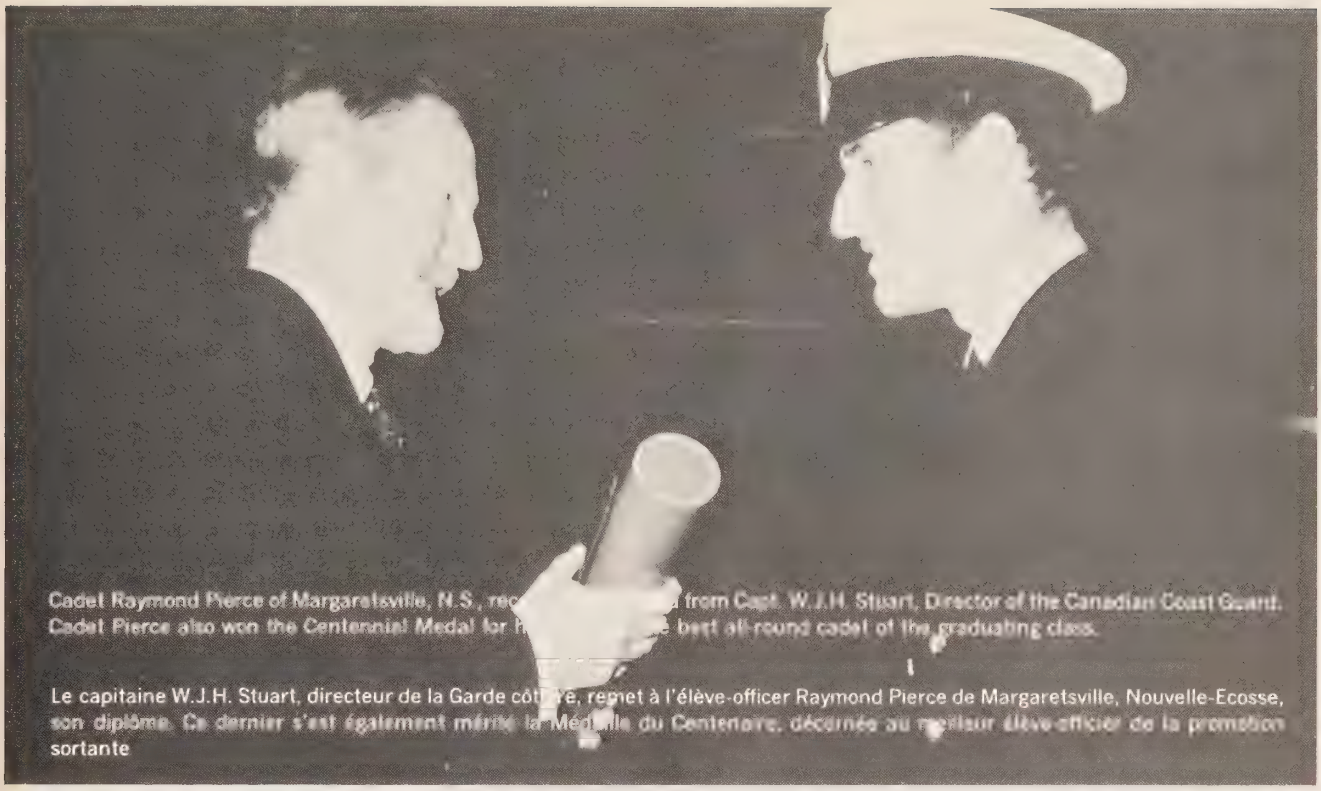
W.A. O'Neil, Deputy Administrator of the Marine Transportation Administration, inspects the graduating class. From left to right: Capt. Hugh Plant, the Director of the College, Cadet Germain Tremblay, W.A. O'Neil, Cadet Michael Keefe and Cadet Stafford Bingham.

M. W.A. O'Neil, l'administrateur adjoint de l'Administration du transport maritime, passe en revue les diplômés. De gauche à droite: le capitaine Hugh Plant, directeur du Collège, l'élève-officier Germain Tremblay, M. W.A. O'Neil, les élèves-officiers Michael Keefe et Stafford Bingham.

For Cadet Roland Webb of White Rock, B.C., it was a happy day in more ways than one, as he was married shortly before the graduating ceremony. He is being congratulated by his mother, Mrs. Roland Webb, and his wife, Angela.

Pour l'élève-officier Roland Webb de White Rock, Colombie Britannique, c'était une journée vraiment mémorable puisqu'il s'est marié peu avant la remise des diplômes. Sa mère, Mme Roland Webb, et son épouse Angela le félicitent.



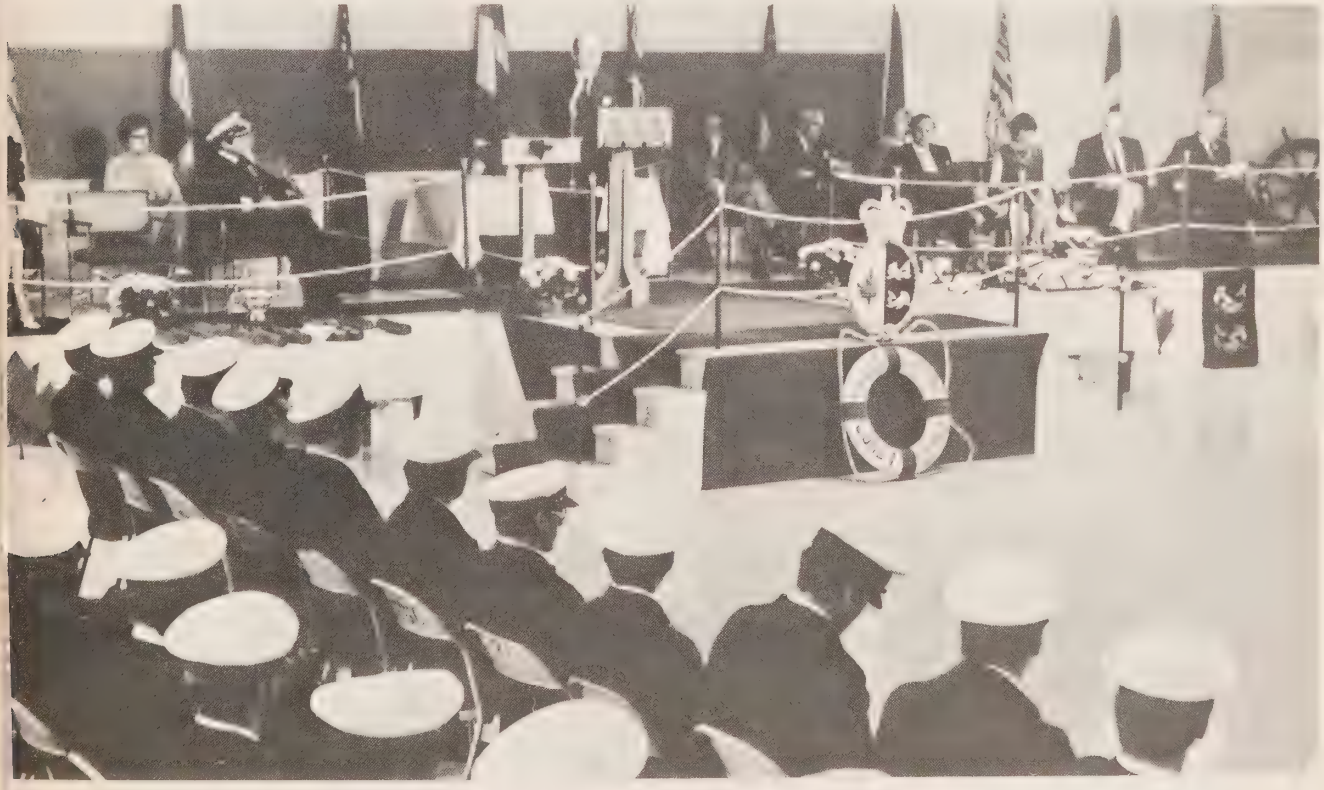


Cadet Raymond Pierce of Margaretsville, N.S., rec[illegible] from Capt. W.J.H. Stuart, Director of the Canadian Coast Guard. Cadet Pierce also won the Centennial Medal for h[illegible]e best all-round cadet of the graduating class.

Le capitaine W.J.H. Stuart, directeur de la Garde côt[illegible]e, remet à l'élève-officier Raymond Pierce de Margaretsville, Nouvelle-Ecosse, son diplôme. Ce dernier s'est également mérité la Médaille du Centenaire, décernée au meilleur élève-officier de la promotion sortante

Capt. W.J.H. Stuart, Director of the Coast Guard, addresses the cadet body, visitors and guests during the graduation ceremony.

Le capitaine W.J.H. Stuart, directeur de la Garde côtière, s'adresse aux élèves-officiers, aux visiteurs et aux invités au cours de la cérémonie.



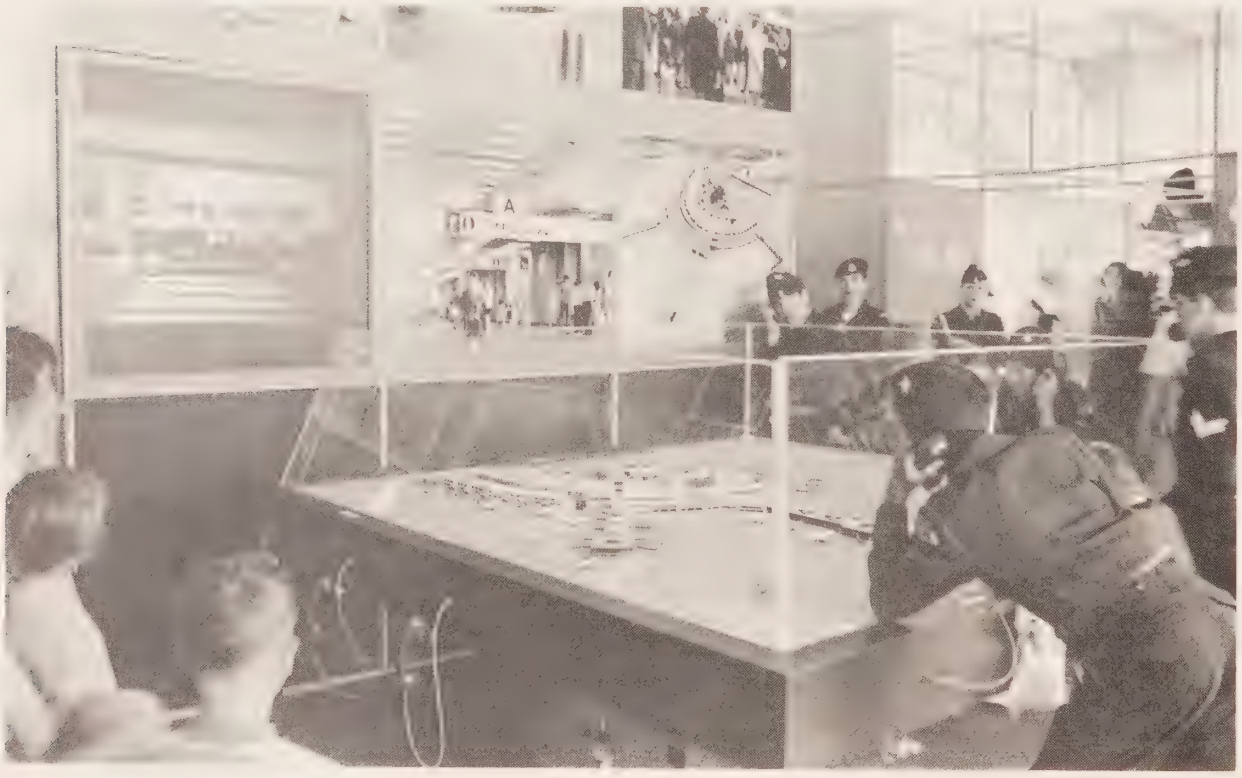
A Salute To Aviation

Besides watching colourful cowboys, bucking horses and bawling steers, nearly one million visitors to this year's exciting Calgary Exhibition and Stampede got an in-depth historical, contemporary and futuristic view of aviation in Canada. Exhibits, films, displays, seminars and speeches were all part of the Stampede's Salute to Aviation. Flare Square, on the Stampede Grounds featured a record number of federal and air carrier displays and exhibits devoted to civil aviation. The Third International Aviation Conference was held in Calgary this year in conjunction with the Stampede. Special Ministry speakers at the conference were O.G. Stoner, Deputy Minister of Transport, who gave the keynote address, W.H. Huck, Administrator of the Canadian Air Transportation Administration, and Canadian Transport Commission Chairman, Hon. E.J. Benson.

Eighteen federal government departments cooperated to produce a mammoth series of exhibits in Flare Square to show visitors how their daily lives are affected by aviation and aerospace. Among the displays were the famous Silver Dart, the first heavier-than-air machine to fly in Canada, and a full scale model of the Department of Communication's Canadian Technology Satellite, which will be Canada's latest venture into space when the actual satellite is launched in 1975.

The Ministry of Transport portion of the Federal Government display featured a model of the new $100 million air terminal and facilities for Calgary International Airport; a display on international airports, an exhibit on Air Traffic Control, and colour — sound slide shows on the Ministry's airports and construction services activities and the Ministry telecommunications and electronics services.

Visitors to the Ministry of Transport display saw a model of the new air terminal of Calgary International Airport as it will appear in 2000 A.D.



OUR FIRST SHIP ON THE PACIFIC



BY THOMAS E. APPLETON

CGS *Sir James Douglas*. This photograph is believed to have been taken about 1871 from the Marine Agency which was then in James Bay. Looking westwards, the Sooke Hills may be seen in the background with Laurel Point on the left and Songhees Point to the right. (Courtesy, B.C. Archives)

On the first of January, 1865, a small wooden steamship was launched at Victoria. It was a harbour tug intended to assist a dredger and a number of large mud punts which were employed in deepening the harbour. Although the Government of the Crown Colony had honoured the occasion by naming their new vessel *Sir James Douglas*, it is probable that there was little by way of ceremony at the launching.

Sir James was absent at the time — he was then touring Europe before rounding off his eventful career with twelve years of peaceful retirement — and in any case it is unlikely that a humble tug would excite more than passing attention in a marine community accustomed to the awe-inspiring sight of Her Majesty's stately steam frigates in nearby Esquimalt. But in the thirty-five years which were to elapse from the time that the keel was laid until the vessel was finally scrapped, the *Sir James Douglas* would earn a place in the marine history of Canada.

The hull was a well proportioned 34.8 metres (116 feet) overall with a beam of 5.6 metres (18 feet 8 inches) and 3.1 metres (10 1/2 feet) draft — and stoutly built on a framing

of oak and pine. This specification was perhaps damned by faint praise with the statement that the planking was "...partially copper fastened and copper bottomed" but ten years afterwards an official report noted that the *Sir James Douglas* was "faithfully and well put together by the contractor in 1864".

Although the hull was built locally the resources of the young Colony could hardly have been expected to produce the machinery. It is therefore surprising that although the engine and condenser were imported from England, the boiler was made in Victoria. The engine, which was rated at 40 nominal horsepower, had twin cylinders arranged diagonally and was coupled directly to the shaft which carried a two-bladed propeller. The boiler was of tubular type with three furnaces. As the Annual Report of 1873 describes the *Sir James Douglas'* boiler as having very short tubes through which "... a portion of the heat escapes through the chimney without rendering any service" it is hardly surprising that it was a notorious coal-eater even by the standards of the time — *at least half a ton of coal every hour.*

As with many steamers of the period, the question of coal consumption placed limitations on economic usefulness. With the running costs of the *Douglas* added to the already heavy coal bill for the steam dredger, the Victoria Harbour deepening scheme was found to be beyond the slender financial resources of the Colony and it was abandoned for the time being. There was, however, alternate employment in supplying Race Rocks lighthouse, which was established in 1861; when a lightship was placed off the Fraser River in 1866 the servicing of aids to navigation from Victoria more than doubled. Even these two lights did not require continuous operation of a steamer but here, at least, sailing schooners were too uncertain. By contrast the government steamer, which soon earned a good reputation for seaworthiness, was utterly reliable.

Before long this reputation spread among the scattered settlements along the east coast of Vancouver Island and, in response to public request, the *Sir James Douglas* was placed on regular passenger service with occasional trips on lighthouse supply and buoy work. The schedule provided for a weekly service from Victoria to Nanaimo and return, a two-weekly run to Comox and intermediate ports, and a weekly trip in the opposite direction from Victoria to Sooke. The *Douglas* was fitted with accommodation for twenty day passengers below decks — there were no sleeping berths — and doubtless many more were taken on the upper deck in fine weather.

Despite her expensive record the Colonial steamer did well. The Annual Report for the Department of Marine and Fisheries for 1872 — by which time the *Sir James Douglas* had passed to control of the Government of Canada following Confederation — noted that receipts from passenger tickets and mail came to $11,764 while the total cost of maintenance and repairs amounted to $12,115. Few government ships, either then or since, can approach this highly satisfactory financial statement. This situation could not last indefinitely; a pompous little note of the same report concluded that "... another steamer has been placed by private enterprise on the route formerly occupied by the *Sir James Douglas*, with much better accommodation, and it does not now appear necessary that she should be longer employed in that business, as it is not the policy of the Department to employ any of the steamers under its charge in competition with private interests". Too bad she never quite got out of the 'red', but it was a good try.

Doubtless some of this success in passenger carrying was due to the work of the original officers who, without exception, were men of character and ability. The master of the *Sir James Douglas* at this period was Captain William R. Clarke, a retired warrant officer of the Royal Navy, who first arrived in British Columbia as the gunner of HMS *Forward*. The chief engineer was William A. Steele, a Dundee man who graduated from the little *Douglas* to some of the best known steamers on the Pacific seaboard including the *Beaver* which made her name under the Hudson's Bay Company flag and as a surveying ship while under charter to the Royal Navy. The purser, a key officer on passenger ships, was Edward Quenell, who was also a retired naval man; he eventually settled in Nanaimo where in 1894 he was elected Mayor.

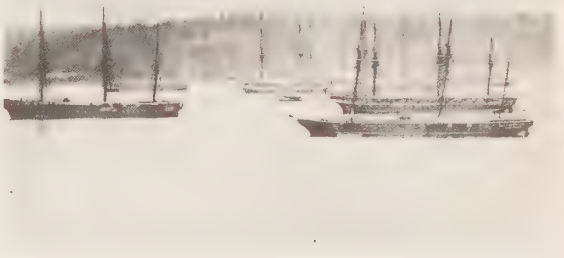
After withdrawal from commercial activity, the *Sir James Douglas*, which was the only government-owned steamer on the coast, was

increasingly used for official trips as the Province grew. In October 1872, for instance, the *Douglas* was placed at the disposal of Sandford Fleming, Chief Engineer of the Canadian Pacific Railway Survey. At that time the Pacific terminal of the line had not been chosen and the merits of Burrard Inlet or Vancouver Island were being hotly debated. Perhaps it was on this cruise that the purser began to fancy Nanaimo as his own particular terminal. With Fleming's party was the Rev. George M. Grant, of Halifax, who later wrote an account of the expedition, published in London by Sampson, Low, Marston in 1873, in which the author remarks on Nanaimo for "...the beauty of its women, the intelligence of the men, the musical taste of the Rector and the Choir". No wonder that the Navy lost some of its best men on retirement — and others, be it said, by desertion for even more favourable pastures.

In 1883 the *Sir James Douglas* was put in hand for a refit. This turned out to be a major operation in ship surgery involving cutting the hull in half and grafting in a new portion of middle body which lengthened the vessel by some 6 metres (20 feet.) This was very successful in that it gave her another knot or so — she is credited with a full 10 knots as a result — and even her voracious appetite for coal benefited from this exercise in "slim and trim". From then until the arrival of the first *Quadra* in January 1892, the *Sir James Douglas* was the workhorse of the Department of Marine and Fisheries engaged in laying buoys, supplying lighthouses, laying telegraph cable and conveying innumerable inspection parties up and down the coast. Whatever may have been the economics of her fuel bill, it would appear that the cost of provisioning was modest — and one can only hope that the food was adequate — for at this period it is recorded that the crew of twelve were provisioned for 53 cents per day per man.

But when the *Quadra* arrived at Victoria the *Douglas* was laid up and placed in reserve, for her boiler — the heart and soul of the ship — was beginning to show signs of trouble. From time to time efforts were made to sell the *Douglas* as a going concern but there were no takers. In October 1899 tenders were invited for disposal "as she lies" and the vessel was bought for scrap by a Mr. R. Winkleman who, at the price of $1,292.50 was the highest bidder. Considering that her total cost in 1864 had been $32,982, one can only suppose that Mr. Winkleman was able to realise a modest profit on his investment.

Warships of the Royal Navy, the "Flying Sqadron", in Esquimalt in May 1870. In the middle, second from the foreground, is HMS *Charybdis* which in 1881 was commissioned by the Department of Marine and Fisheries in an ill-fated scheme to start a Canadian Naval Reserve from Atlantic coast fishermen.
(Courtesy, Public Archives)



Sir James Douglas (1803-1877) who was successively Governor of Vancouver Island (1851-1863) and British Columbia 1858-1864)
(Courtesy, Public Archives)



Révolution Dans le Classement de Documents

PAR DAVID AUSTIN
RÉDACTEUR

Au quartier général du ministère des Transports à Ottawa, il y a plus de 50 millions de documents qui dorment dans les classeurs.

Chaque jour, 12,000 nouveaux dossiers arrivent au service de classement principal, après avoir chacun fait au moins six arrêts de parcours. Plus de 4 millions de documents pesant environ mille tonnes sont intégrés dans les classeurs à chaque année.

Cette montagne de papier peut, si mise sur microfilm, être emmagasinée dans un espace de 120 mètres cubes seulement (400 pieds cubes).

La mise sur microfilm signifie la classification des documents sur pellicule. C'est ni plus ni moins qu'une reproduction photographique réduite. Il est possible d'obtenir des réductions de 1/150.

Le plus grand avantage du microfilm n'est pas, comme on serait porté à le croire, l'économie d'espace réalisé, mais plutôt le temps épargné pour retracer une information, Le fonctionnaire qui désire consulter un document n'a besoin que de 60 secondes pour vérifier les fiches, sortir la cassette et la visionner.

Un autre avantage de ce système est le transfert rapide de l'information d'un endroit à un autre. Quatre-vingt-dix-huit pages peuvent être transposées sur une cassette de 105 mm x 148 mm (4 po. x 4 po.) On imagine l'économie réalisée quand on expédie de la documentation par courrier!

Afin de faciliter l'introduction de ce système au ministère des Transports, on a créé, voilà un an, un service spécial de Conseils en Micrographie, sur la recommandation du Comité Inter-Service du microfilm, devant faire partie des services de gestion et d'administration.

Monsieur Ken Davies prévoit un avenir intéressant pour ce service de conseils en micrographie, dont il est chef. Eventuellement tous les documents conservés au ministère des Transports seront miniaturisés d'une façon ou d'une autre.

Déjà on reconnaît diverses occasions pratiques d'utiliser le microfilm au M.D.T..À l'administration de la marine, le service d'inspection des navires a mis sur microfilm tous les plans de construction des navires gouvernementaux et commerciaux du Registre canadien.

Au cours des 5 prochaines années, les informations sur l'entretien des aéroports du ministère à travers tout le pays seront reproduites sur microfilm.

Déjà toutes les données techniques de l'administration de l'Air et des services de la Marine ont été livrées à la pellicule.

Bientôt tous les bureaux régionaux, aéroports, centres de télécommunications, et même les navires de la Garde côtière canadienne utiliseront le microfilm pour maintenir à jour leur banque d'information.

M. Davies souligne l'importance de tout mettre sur pellicule, en établissant un système unique avec le même équipement. Etant donné que dans un avenir prévisible on véhiculera d'un endroit à un autre des informations sur microfilm, il est essentiel que le système soit le même partout. Comme le microfilm peut facilement être reproduit et conservé, cela assure une meilleure préservation des documents d'importance.

La révolution dans le classement de documents sur microfilm ne fait que commencer! Il est permis de croire qu'un jour, peut-être pas si lointain, les lecteurs de TRANSPORT CANADA n'auront plus à tourner les pages de notre magazine. Ils n'auront qu'à insérer la bande de microfilm dans un projecteur et à ouvrir les yeux...

Toute la publication annuelle de Transport Canada peut être reproduite sur trois chemises de microphotographies.



BRAVERY MEDALS FOR NHB POLICEMEN

Two members of the National Harbours Board Police are to be presented with Medals of Bravery by the Governor General, in recognition of a daring rescue in 1972 atop the Jacques Cartier Bridge in Montreal.

Lt. Marcel Mailloux (a sergeant at the time of the rescue) and former Constable Germain Albert are to be honoured for their successful efforts in rescuing a man from atop the bridge. The two policemen climbed a ladder behind where the man was perched and seized him. They bound the hysterical man, and after a struggle carried him down an aerial ladder.

The coolness and courage the two officers displayed was exceptional in a situation that endangered the lives of all three men.

The Medal of Bravery is awarded by the Government of Canada for acts of bravery in hazardous circumstances and recipients are entitled to use the letters "M.B.' after their surnames.

MÉDAILLE DE BRAVOURE POUR DEUX POLICIERS DES PORTS NATIONAUX

Deux membres du corps de police des ports nationaux seront prochainement décorés de la Médaille de Bravoure, à Rideau Hall, en signe de reconnaissance pour un spectaculaire sauvetage accompli en 1972, sur la structure du pont Jacques Cartier à Montréal.

Le lieutenant Marcel Mailloux, à l'époque sergent, et Germain Albert, ex- constable, ont réussi, par des manoeuvres bien calculées, à s'approcher par derrière, et à empoigner le triste individu qui voulait sauter du haut de la structure du pont. On a ensuite réussi à descendre le malheureux au moyen d'une échelle aérienne.

Le calme et le courage des deux officiers furent particulièrement utiles dans cette circonstance délicate où la vie de trois hommes était en jeu.

La Médaille de Bravoure est décernée par le gouvernement du Canada pour des actes exceptionnels, dans des circonstances critiques. Les récipiendaires sont autorisés à inscrire M.B. à la suite de leur nom.

Two NHB police officers were photographed from a helicopter atop the Jacques Cartier Bridge in Montreal as they struggled to subdue a man after surprising him by climbing to the girder behind him.

Photo prise depuis un hélicoptère. Deux policiers du Conseil des Ports nationaux sauvent un individu sur le port Jacques Cartier. Ils ont réussi à maîtriser le malheureux en grimpant sur la poutre supérieure, juste derrière lui.



ROAD AND MOTOR VEHICLE CONFERENCE

The annual conference of the "Accident and Defect Investigation" Division was held in Ottawa during May. The conference was attended by various research teams across Canada, representatives of Provincial Governments, Ontario Provincial and local police authorities, and other related groups interested in accident research. The annual Conference provides an opportunity for the teams to compare their activities over the past year, and for the Ministry to bring them up to date on new activities.

The Ministry has budgeted $375,000 for the application of the "Road and Motor Vehicle Accident Research" Program for 1974-75. There are now nine teams involved in this program across Canada and plans are under way to form a tenth. In addition, the Ministry operates a team from its Ottawa headquarters. In 1973-74, 161 cases were researched by the combined teams. In addition, 418 safety related defects were investigated after review of 890 suspected defects. These investigations influenced recalls. During the past winter two separate teams were employed on "Snowmobile Accident Research", and over 200 snowmobile accidents were investigated.

Teams are situated in Halifax, Fredericton, Montreal (two), Toronto, London, Winnipeg, Saskatoon, Vancouver and the tenth team is planned for Calgary. These are "Multi-Disciplinary Accident Investigation Teams", comprising individuals with professional training in legal, psychological, technical, engineering, accidentology, medical, and police work. Each team is supported by local agencies and institutions involved in accident research, and has at its disposal laboratory facilities of its institution, or those available to the Ministry.

The Ministry works very closely with its opposite numbers in the U.S.A. to accomplish a common goal. Team members are trained through the joint facilities in the U.S.A. and Canada. All complaints from users are computer-stored and more than 2000 have been recorded to date.

The research program's objective is to establish all factors, human, vehicle and environmental in the pre-crash, crash and post crash phases contributing to an accident. The program endeavours to identify the cause of the injury that resulted and recommend methods of reducing injury severity. From the information obtained the Ministry may evaluate the effectiveness of Motor Vehicle Safety Standards and determine the need for new or improved standards. In addition, this program endeavours to identify safety-related defects or deficiencies which may be present in vehicles operating on the road systems in Canada.

The annual conference of the Accident and Defect Investigation was held in Ottawa during May with J.A. Bancroft of the Ministry of Transport as Conference Chairman.



TRANSCAN



Terminal Building, Winnipeg International Airport
Aérogare de l'aéroport international de Winnipeg

RETIREMENTS/RETRAITES



Maurice Baribeau has retired as Regional Administrator, Air Services, for the Quebec Region, after 37 years of government service. Over 350 people gathered to sign a commemorative scroll at a banquet and presentation in Mr. Baribeau's honour. Eric Winsor, Director General of Airports and Construction of the Air Administration (right), was among those attending the banquet.

M. Maurice Baribeau a pris sa retraite comme administrateur des services aériens dans la région de Québec, après 37 ans de service au gouvernement. Plus de 350 personnes ont assisté au banquet donné en son honneur, dont le directeur général de la direction des services des aéroports et de la construction à l'administration de l'air, M. Eric Winsor.



Senior Assistant Deputy Minister G.A. Scott presents R.M. "Dick" Ross with a gift, honouring his service in the Ministry, upon his retirement. Mr. Ross joined the Ministry after a career in the Armed Forces, and his last position was Departmental Advisor in the Minister's Office.

Le sous-ministre adjoint principal, monsieur G.A. Scott, offre à M. R.M. Dick Ross un présent pour souligner ses années de service au ministère. Monsieur Ross, qui prend sa retraite, nous était venu des Forces armées canadiennes. Il occupait au ministère le poste de conseiller ministériel au bureau du ministre.

Howard Booth Callkins, an Electronic Technician with the Telecommunications and Electronics Construction Branch in Ontario Region (Air) has retired after 32 years of service with the federal government.

M. Howard Booth Callkins, technicien en électronique à la division des Télécommunications et de l'Électronique pour la région aérienne de l'Ontario prend sa retraite après 32 ans de service au gouvernement fédéral.

SUGGESTION AWARDS

J.F. Wood	Winnipeg, Manitoba	$430.
H.C. Dugan	Winnipeg, Manitoba	$190.
B.R. Goodine	Georgetown, Ontario	$150.
R.J. Lacasse	Ottawa, Ontario	$150.
C.L. Amson	Surrey, B.C.	$100.
A.A. Ewanchuk	Whitehorse, Yukon	$100.
A.J. Challis	Winnipeg, Manitoba	$ 80.
K.G. Kirkpatrick	Kamloops, B.C.	$ 75.
G.H. Wheeler	Delta, B.C.	$ 50.
D.M. Baptist	Mississauga, Ontario	$ 50.
J.J. Castling	Transcona, Manitoba	$ 50.
B.B. Wayne	Alert Bay, B.C.	$ 45.
Vernon Hardingham	Alert Bay, B.C.	$ 45.

Road safety specialists met recently at École Polytechnique in Montreal for a conference to discuss problems related to road accidents. Among the topics covered by the conference were the placement of gasoline tanks, design of roofs and placement of bumpers on automobiles.

Des spécialistes de la sécurité routière se sont rencontrés à l'École polytechnique, sur le campus de l'Université de Montréal, pour discuter du problème des accidents de la route. On a abordé, entre autres sujets, les réservoirs d'essence, les types de toiture d'automobiles, et les pare-chocs.



THE CAT AND DUCK METHOD OF FLIGHT

Basic rules for the Cat and Duck method of flight are fairly well known and are, of course, extremely simple.

1. Place a live cat on the cockpit floor. Because a cat always remains upright, he or she can be used in lieu of a needle and ball. Merely watch to see which way the cat leans to determine if a wing is low, and if so, which one.

2. The duck is used for the instrument approach and landing. Because of the fact that any sensible duck will refuse to fly under instrument conditions, it is only necessary to hurl your duck out of the window and follow her to the ground.

There are some limitations to the cat and duck method, but rigidly adhering to the following check list, a degree of success will be achieved which will surely startle you, your passengers, and maybe even an itinerant Tower Operator.

Check list for the cat and Duck Method

1. GET A WIDE AWAKE CAT: Most cats do not want to stand up at any time. It may be necessary to get a large fierce dog to carry in the cockpit to keep the cat at attention.

2. MAKE SURE YOUR CAT IS CLEAN: Dirty cats will spend all their time washing. Trying to follow a washing cat usually results in a tight snap roll followed by an inverted spin. You can see this is very unsanitary.

3. OLD CATS ARE BEST: Young cats have nine lives, but an old cat with only one life left has just as much to lose as you do, and will be more dependable.

4. AVOID STRAY CATS: Try to get one with a good pedigree. Your veterinarian can help you to locate a cat with good character, or try to find a good breeding farm, or if in the city, try to find a reputable cathouse.

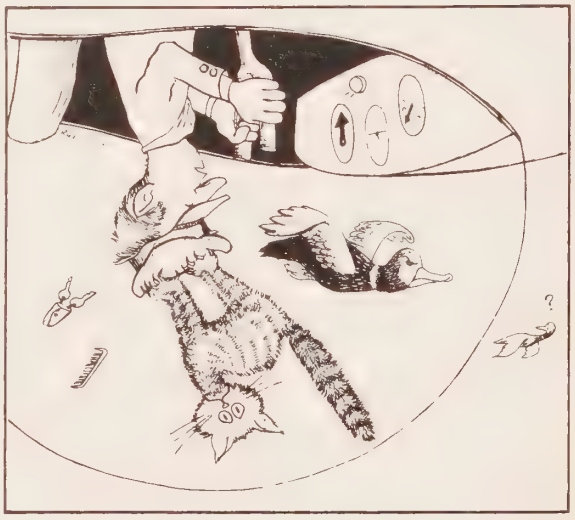
5. BEWARE OF COWARDLY DUCKS: If the duck discovers that you are using the cat to stay upright, she will refuse to leave without the cat. Ducks are better on instruments than you are.

6. BE SURE THE DUCK HAS GOOD EYESIGHT: Near-sighted ducks sometimes fail to realize that they are on the gauges and will go flogging off into the nearest hill. Very near-sighted ducks will not realize that they have been thrown out and will descend to the ground in a sitting position. This manoeuvre is quite difficult to follow in an airplane.

7. USE LAND LOVING DUCKS: It is very discouraging to break out and find yourself on final for a rice paddy: particularly if there are duck hunters around. Duck hunters suffer from temporary insanity when they are sitting in freezing weather in their blinds and will shoot anything that flies.

8. CHOOSE YOUR DUCK CAREFULLY: Many water birds look very much alike and if you are not careful you may get confused between ducks and geese. Geese are very competent instrument flyers, but are seldom interested in going the way you want to go. If your duck heads off for the U.S.A. or Mexico, then you may be sure you have been given a goose.

Reprinted from Voodoo Drums,
CFS Val d'Or, P.Q.





United States Consul General Theodore Dobbs presents a citation to Canadian Coast Guard Captain Gordon Warren of *CCGS John Cabot,* recognizing the actions of the *Cabot's* captain and crew in rescuing the mini-sub *Pisces III* from the floor of the Atlantic last September. The citation from Admiral W.H. Bagley, commander-in-chief of U.S. naval forces in Europe, praised Captain Warren "for professional achievement in the superior performance of his duties". (Kielley photo).

Le Consul général des États-Unis, M. Theodore Dobbs, présente une citation au capitaine Gordon Warren de la Garde côtière canadienne, en service sur le *JOHN CABOT* en reconnaisance des actes héroiques exécutés par ce dernier et son équipage lors du sauvetage dans l'Atlantique du mini sous-marin *PISCES III* en septembre dernier.

La citation reçue par le capitaine Warren est de la main de l'Amiral Watt Bagley, commandant en chef des forces navales américaines en Europe; elle se lit en partie comme suit: pour avoir fait preuve de professionnalisme exceptionnel dans l'exécution de ses fonctions.

Kathy Inglis is the first female radio operator to work north of the 60th parallel in the Western Region of the Air Transportation Administration. Kathy, who was born in Edmonton, is posted at Hay River, N.W.T. Since her appointment, several other females have joined what once was an all-male fraternity in Canada's north

---

Mlle Kathy Inglis est la première femme à travailler comme opérateur-radio au nord du 60 ième parallèle dans la région ouest de l'Administration du transport aérien. Mlle Inglis qui est née à Edmonton est stationnée à Hay Rivers dans les Territoires du Nord-Ouest. Depuis, plusieurs autres femmes ont pénétrées sur ce territoire, un des derniers réservé exclusivement aux hommes.





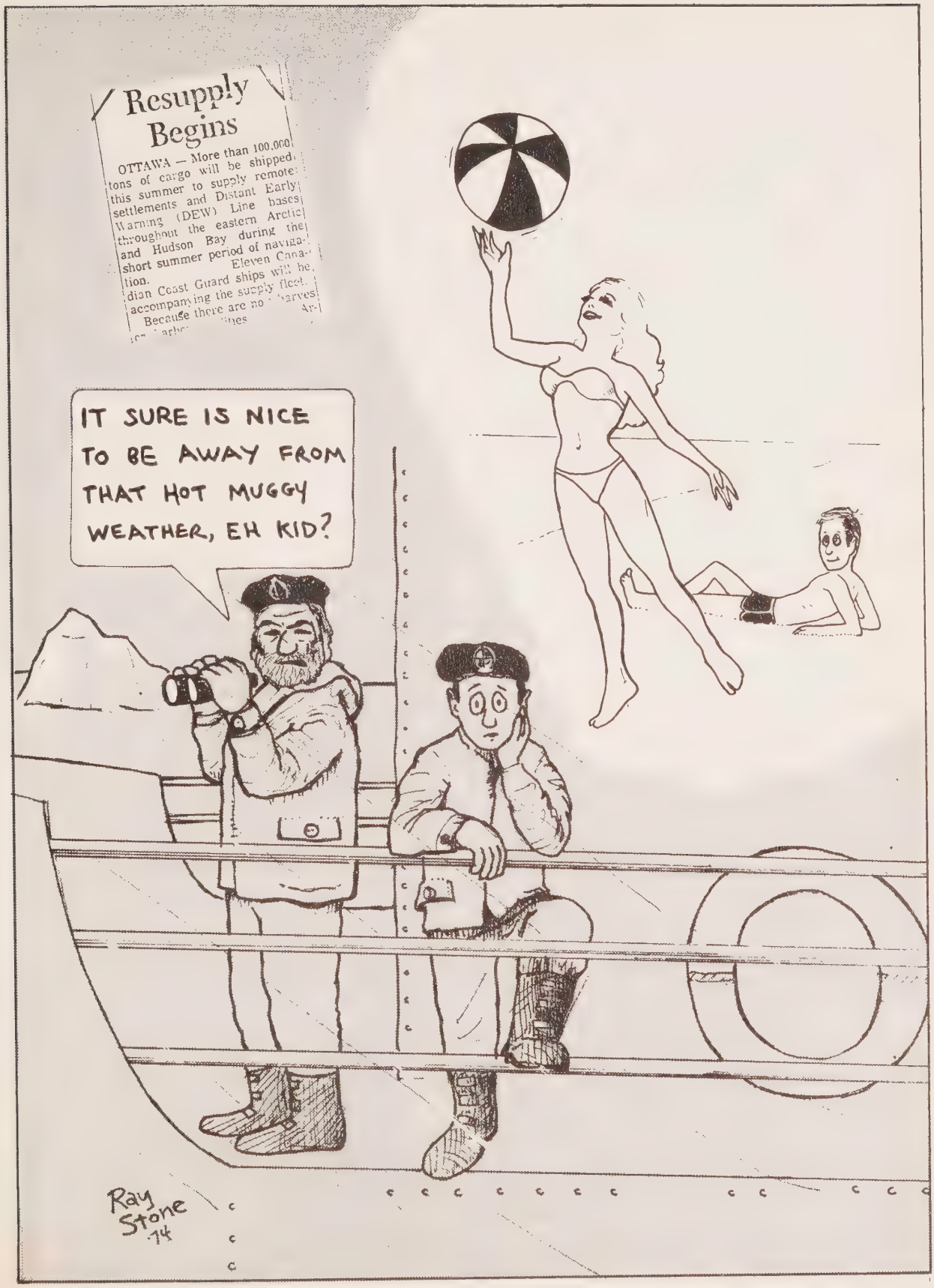
Roy Illing, Administrator of the Canadian Marine Transportation Administration, and Admiral W. Siler, Commandant of the U.S. Coast Guard, signed on June 20th on behalf of their respective governments the joint Canada-United States Marine Pollution Contingency Plan for Spills of Oil and Other Noxious Substances.

M. Roy Illing, l'administrateur des Transports maritimes canadiens, et l'amiral W. Siler, le commandant de la Garde côtière américaine, ont signé le 20 juin, le Plan d'urgence conjoint canado-américain en cas de pollution des eaux par des hydrocarbures et d'autres substances nocives.

Canadian Coast Guard officers Jean Dubé and Mathieu Vachon discuss a navigation problem with Petty Officer Bruce Lemire, an instructor at the Canadian Forces Fleet School in Halifax. Ten Coast Guard officers took part in a three-week radar observers course at the Fleet School, reviewing such subjects as blind pilotage techniques, radio fixing aids, and principles of radar and ship handling.

Deux officiers de la Garde côtière canadienne, Jean Dubé et Mathieu Vachon, discutent d'un problème de navigation avec Bruce Lemire, sous-officier, instructeur à l'école de la Flotte des Forces armées canadiennes d'Halifax. Cette rencontre a eu lieu alors que dix officiers de la Garde côtière ont participé à un cours de radar de trois semaines à cette école. Ils ont eu à ce moment l'occasion de revoir les techniques de pilotage à visibilité nulle, le radiobalisage ainsi que les principes du radar et de la conduite d'un navire.




Resupply Begins
OTTAWA — More than 100,000 tons of cargo will be shipped this summer to supply remote settlements and Distant Early Warning (DEW) Line bases throughout the eastern Arctic and Hudson Bay during the short summer period of navigation.
Eleven Canadian Coast Guard ships will be accompanying the supply fleet.
Because there are no harves
IT SURE IS NICE TO BE AWAY FROM THAT HOT MUGGY WEATHER, EH KID?
Ray Stone 74



Transport Canada Transports Canada

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contents/sommaire

Transportation Council Message / Message du Conseil des Transports 4

Technological Innovation and Canadian Transportation 6

Les Progrès Techniques et les Transports au Canada 11

Future Technology for Canada's Railroads 16

L'Avenir Technologique des Chemins de Fer Canadiens 22

Port of Vancouver 28

Le Centre de Bilinguisme 30

The Bilingualism Centre 32

L'AÉROBAC 34

Pour Vous And Me 36

Transcan 37

transportation council

conseil des transports



Hon. Jean Marchand



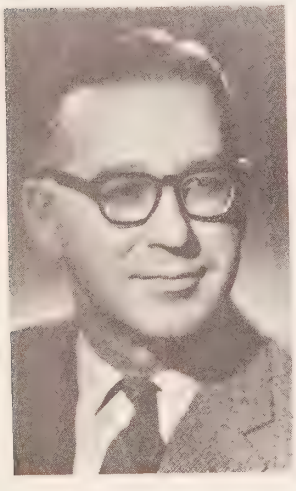
G.A.Scott



J.Guay



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P.D.Normandeau



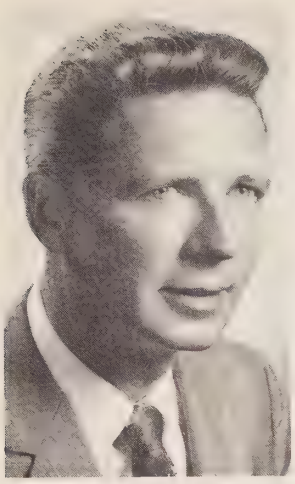
W.M.Gilchrist



Mel Hagglund



W.H.Huck



Robert Turner



Robert Aldwinkle



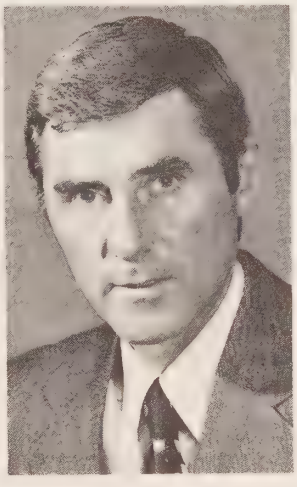
Lucie Dion



M.D.Armstrong



Roy Illing



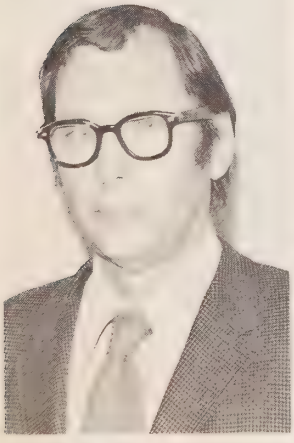
André Laframboise



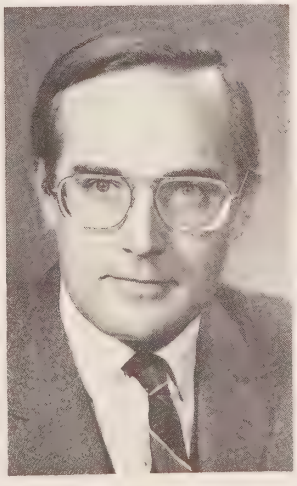
J.M.Davey



J.Y.Clarke



W.F. Nelson



M.E. Butler



Guy Lavigueur



Del Taylor

message

In this edition, two Canadians who play important but different roles in the transportation field take a thoughtful look at the exciting possibilities of future transportation modes and technological developments.

John Gratwick, Vice President, Research and Development, Canadian National Railways, was the first chairman of our Canadian Transportation Agency. In "Future Technology for Canada's Railroads", he discusses such emerging systems as magnetic levitation and air cushion, and indicates how current technology can be applied to modern railway transportation problems.

John Warren Langford, Director of York University's Transport Centre, has written a number of papers on the Ministry of Transport, its organization and functions. In "Technological Innovation and Canadian Transportation", Dr. Langford outlines some interesting possibilities in Arctic as well as general transportation.

While these writers do not necessarily express the views of the Ministry, their thoughts merit consideration. Both articles provide the reminder that a new invention, or mode, is not necessarily the ideal answer to a problem. John Gratwick points out that techniques already proved or in use can be applied to solve most of the railway's more pressing problems. Dr. Langford warns that even a brilliant innovation could cause more trouble that it saved if it did not fit in with a complete transportation development plan.

In continuing its progress toward an increasingly efficient, responsive transportation service, the Ministry will support research and development and, of course, implement new technology which proves its worth. An example is the experimental STOL passenger service recently begun between Ottawa and Montreal.

Dans ce numéro, deux Canadiens qui s'intéressent de près au transport examinent les formidables développements techniques que connaîtront demain les transports.

John Gatwick, vice-président à la Recherche et au développement pour le Canadien National et qui était auparavant directeur de notre Agence canadienne des transports, et John Warren Langford, directeur au Centre des transports de l'université York, nous présentent leurs idées sur le sujet. Quoiqu'ils n'expriment pas nécessairement les points de vue du ministère, leurs avis méritent d'être exposés. Leurs articles nous rapellent qu'une nouvelle invention ou qu'un nouveau mode de transport n'est pas nécessairement la solution toute trouvée à un problème donné.

John Gatwick dans son exposé parle de l'introduction de nouveaux systèmes de lévitation magnétique et de coussin d'air. Il nous fait voir comment la technologie moderne peut solutionner nos problèmes de transport par chemin de fer. Il souligne de plus que notre technologie actuelle qu'elle soit ou non en application, peut d'hors et déjà être très utile à l'amélioration de la situation. Dr. Langford qui a écrit de nombreux articles pour le compte du ministère, nous fait entrevoir entre autres quelques-unes des possibilités qui s'offrent dans l'arctique dans le domaine des transports. Il nous met en garde contre les innovations les plus brillantes qui, si elles ne sont pas comprises dans un grand plan d'ensemble de développement des transports, peuvent nous causer plus de difficulté que de bien.

S'efforçant de créer une infrastructure efficace et adéquate des transports, notre ministère entend appuyer tout projet de recherche et de développement qui peut améliorer la situation. L'exécution du projet aérien ADAC, actuellement au stage expérimental entre Montréal et Ottawa, en est une preuve.

Rapellons cependant que le changement

Change for the sake of change, however, has no place in our program. We shall continue to build on modes that have served us well in the past, with an open mind to any promising innovations.

There will be many changes. More powerful icebreakers, expanded air services, turbotrains, urban transportation, and a variety of other developments will contribute to the enormous transportation activity. This will cost money, and in many areas it is government policy that users of the transportation system contribute substantially to the cost. Of $450 million spent on operations by the Ministry in 1973, about $110 million was recovered from users. The rest of the burden falls on the general tax payer. This balance, however, is one that is a political decision and one that the Government keeps under careful review.

One thing that will not change is the desire of the Ministry and its members to respond to the public's changing needs in maintaining an efficient and safe national transportation system.

pour le simple plaisir n'a pas sa place dans nos programmes. Nous nous devons de continuer de prendre en considération les facilités que nous employons présentement et qui nous servent encore bien, tout en demeurant ouverts aux innovations qui offrent des possibilités adaptées à nos besoins.

Les changements seront nombreux. Nous serons dotés de brise-glaces plus puissants, nos services aériens connaîtront une expansion continue, les turbotrains seront en service dans plus de centres, les transports urbains seront presque complètement modifiés. Tout ceci évidemment demande des fonds importants. Un moyen d'en obtenir c'est de continuer à appliquer notre pratique de faire contribuer les usagers au financement. En 1973 par exemple sur 450 millions de dollars dépensés par le ministère, 110 millions ont été fournis par les usagers, alors que la balance est financée par les contribuables.

Le gouvernement continue de surveiller de près ces dépenses qui sont d'une importance politique majeure.

Parmi tous ces changements, nous aimerions souligner qu'il est une chose qui ne changera pas, dans notre organisation, il s'agit de la volonté que nous avons de répondre adéquatement aux besoins sans cesse croissants du public canadien. Nous continuerons de déployer nos efforts afin d'assurer à notre pays un service de transport le plus efficace et sûr possible.



O.G. Stoner

O.G. Stoner

Technological Innovation and Canadian Transportation

by John Warren Langford, Ph.D.

An airport without congestion is visualized as an important part of our future needs. Tomorrow's air terminal will be geared to minimize inconvenience, and to facilitate the movement of travellers and freight.



ILLUSTRATION COURTESY OF OTIS ELEVATOR COMPANY LTD.

I have been asked to contribute some thoughts on future technolohy and transportation for this edition of Transport Canada. At first I thought that this task would be simple. Across my desk passes an endless stream of journals, magazines and books filled with the newest ideas about how, in the year 1985 or 2000, we will be travelling and moving goods from A to B. At the moment, I have a particular interest in the application of modern technology to the transportation problems of the Arctic. I would collect these ideas together and write a piece out-lining some of these fantastic and not-so-fantastic future systems (with particular reference to the Arctic) for the entertainment — and hopefully the edification — of those readers with less time than me to browse amongst the daydreams of the futurist engineers and seers of modern technological society.

But this was not to be. As I sat down to describe the problems and prospects associated with the future impact on our national transportation system of such emerging machines and techniques as dirigibles and the liquification and marine shipment of natural gas, I was struck by the need to place all this new gadgetry and claimed efficiency in some sort of perspective.

While the issue of keeping technological advances in perspective is of universal importance, it presently merits particular attention with respect to the rapidly evolving transportation system within the Canadian Arctic. Here it seems possible that technology could literally work miracles over the next few decades. The student of Arctic transportation is faced with a myriad of new and revived engineering wizardry in all modes. The era of polar class icebreakers is almost upon us as a result of the interest provoked by the highly-publicized progress of the Manhattan through the North-West Passage in 1969. The American firm, Lockheed Shipbuilding and Construction Co., should have the first of a brace of polar icebreakers ready for the U.S. Coast Guard by early 1975. Finland has designed a 140,000 h.p. (compared to Canada's largest at 24,000 h.p.) polar icebreaker for year-round operations, and Canada has been toying with the idea of a nuclear-powered vessel presumably of a similar class. Canada and Germany have also been looking at the problems and prospects associated with the development of ice-breaking cargo vessels which could operate independently of other ice-breaking support vessels, and during the last federal election it was indicated that Canada would proceed to construct a prototype of such a cargo vessel.

From General Dynamics Corporation in the U.S. comes an even more titillating technological curiosity. Plans have been produced for a nuclear-powered oil carrying submarine which would require, prior to implementation, the development of a whole new technology related to year-round off-shore Arctic submarine terminals and pipeline connections to the surface. The future scenario for marine transportation in the High Arctic is rounded off by Canadian and American studies of the feasibility of employing fleets of supertankers (over 1,000 ft. in length) to carry liquid natural gas and oil from still-to-be-conceived Arctic super ports to southern markets. All of these intrusions by new marine technology into the existing Arctic transportation system would require new or improved techniques to produce the required hydrographic charts for the affected Arctic waters; all would benefit from recent Canadian and American

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advances in satellite and radar technology which will provide ships with vastly improved information on ice thickness and concentration in navigable channels.

The air mode is not without its futuristic dreams for an efficient Arctic transportation system. Boeing in the U.S. and the Canadian Great Plains Project Group have been vocal proponents of the RC-1, a 12 engine plane capable of a speed of 400 knots carrying a cargo of 2 million pounds of oil or liquid natural gas in pre-loaded detachable pods. It has been estimated that a fleet of between 23 and 42 of these monsters would be required depending on how far the cargoes were flown before transfer to pipelines. The Soviet Union has moved into the lead with respect to the development and application of airship (dirigible) technology. They have in operation a small dirigible capable of lifting five tons, and are completing plans for a nuclear-powered airship with a capacity of 180 tons (or, as a matter of interest, 1,800 passengers) and a cruising speed of 190 m.p.h. Arctic Helifloat Ltd. of Calgary has developed conceptual models for its Helifloat, a vehicle combining aspects of the dirigible, helicopter and fixed-wing aircraft, which might carry as much as 37,000 barrels of liquid natural gas at a cruising speed of 100 m.p.h. On a more conventional level, the Department of National Defence continues to examine the options before choosing a technologically sophisticated successor (with major Arctic surveillance responsibilities) to the Argus reconnaissance aircraft.

In the netherworld between the air and surface modes are developments in surface effect vehicles (SEVs) and air cushion vehicles (ACVs) which are already seeing limited use in the Arctic. Aerojet-General corp. of Tacoma, Washington, is designing SEVs and ACVs for "unique tasks" in Alaska. Hoverjet Inc. and Bell Aerospace (Canada) are also working on smaller hovercraft for exploration of remote areas and Coast Guard service respectively. Innovations in pure surface vehicles include the Bechtel (U.S.) rolligon which uses air bags in place of tracks and the Mobile Arctic Shelter being developed by the Defence Research Board — a two-man unit providing life support and operational capabilities for periods of up to 72 hours.

On the edge of the spectrum closest to the traditional technology of railways, several exotic concepts have been raised, including the possibility of employing magnetic levitation tankcars on elevated monorails (driven by gas turbines or linear-induction motors) for the shipment south of liquid natural gas or oil. On the basis of the success of the Hudson Bay Railroad and the Great Slave Lake Railway, feasibility studies have been conducted by the Canadian Institute of Guided Ground Transport, and CN/CP on a unit-train system for the Arctic. Here the most direct competition is with pipeline technology which offers tested methods for shipping oil and natural gas, and speculative slurry pipeline prospects for other mineral resources. Arctic railway, pipeline, and highway technological developments continue to be plagued by the problem of establishing a right-of-way across Arctic tundra without disturbing delicate ecological balances.

This brief account of machines and techniques being developed for possible use in the Arctic is not meant to be exhaustive. However, it is designed to illustrate the potential impact of modern technology on one aspect of our national transportation system. An equally varied technological future could be described for urban and inter-city transportation systems. Each element of the national transportation system has been warmly embraced by the Sirens of technology over the last few years, and the song they sing is everywhere the same: Only through the continous application of the fruits of technological advancement will the transportation system meet its challenges. Therefore, the issue in not one of merely deciding which new gadget or technique works best, but rather one of gaining some perspective on the nature of the relationship between the world of modern technology and world of transportation. Only in this context is proper assessment of technological options feasible.

In my opinion, certain specific questions need to be answered before one can begin to determine the degree to which the national transportation system should be left open to transformation at the hands of modern technology. First, why is transportation at present so apparently deserving of the attention of the future technology elite? Secondly, it is important

to query the expanding role that governments play in fostering modern technology within the transportation system. Looking at the problem from another perspective, will this penetration of the transportation system by modern technology distort the system, tying it too closely to technological innovations that may not work properly, and focusing the energies of the system on narrow economic goals (such as resource extraction and stimulation of a particular sector of the economy) at the expense of traditional goals in the Canadian context? Finally, what transport-oriented criteria suggest themselves as guidelines for the determination of the optimal relationship between modern technology and the transportation system and a useful role for government in the fostering of this relationship? What follows is some brief comments related to these questions.

Modern technology is more than new or proposed hardware. As Jacques Ellul has pointed out in his seminal work The Technological Society, the phenomenon of modern technology is in effect, "the totality of methods rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity". In short, while this article may be more concerned with machine aspects of modern technology and their impact on existing transportation systems, the modern technological revolution is one that transcends machinery and focuses on technique in all aspects of human endeavour. The effect of modern technology, in its drive to replace the pragmatic with the methodological, is felt in terms of techniques for organizing, producing, making war, and making love. Nothing is outside the grasp of modern technology.

Transportation is blessed or damned at this moment in time to be one of the major foci of so-called modern technology. This is particularly, but not exclusively, true in the United States. The future-oriented technologists — undoubtedly to their credit — say that the bloom was off the rose of technological warfare after the mid 1960's. Fascination with weapons systems and delivery devices for various sorts of war-heads and bombs was waning with the collapse of the cold war and the increasing confusion concerning the meaning and importance of the Vietnam conflict. The technologists turned their sights on the domestic scene and transporation was one area that really caught their fancy. New methods and machines would revive the urban transportation systems of the inner cities, restore the flagging fortunes of the railways, and move the air transportation industry into a new era of supersonic aircraft and rocket travel. The design of personnel carriers made way for the development of "people movers". Governments moved in to support these new machines and ideas because it is obvious that new machines and techniques lead to more production and more economic growth.

This is what progress is all about. But progress for the economy through the application of new technologies may not mean progress for the transportation system. Many futuristic ideas, supported by governments for both their prospective positive impact on the economy as well as on the particular transportation system in question have failed to meet expectations in the latter. Some examples. Magnetic levitation/linear induction vehicles were the spearhead of an effort to revolutionize the economy of Ontario by shifting the emphasis of the transportation-oriented manufacturing sectors of the province from their heavy reliance on Detroit-style automobile production. Ontario was to become the birthplace of a new urban transit manufacturing industry and with the marketing and capital-raising skills of the federal government and other provinces, make the world its market place. Moreover, a new transit network based on magnetic levitation/linear induction vehicles would virtually solve the transportation problems of metropolitan Toronto. The hitch is that the system doesn't appear to work. Severely escalating capital costs combined with technical development problems related to control, levitation, and propulsion systems have cast doubt both on the viability of this widely heralded automated transit system and the criteria employed in its selection.

Another example. Federal government support for STOL aircraft development is largely motivated by the goal of establishing a revived aero-space industry in this country as a key element in a technologically advanced economy. Unfortunately, the domestic transportation system is forced to play a major part in this modern revival, involving the application of STOL aircraft to inter-city travel in the Toronto-

Ottawa-Montreal triangle where it obviously will not answer the demand for inexpensive, reliable and comfortable mode of travel for large numbers of people. As part of its role in fostering this new transportation technology, the federal government finds itself not only providing development funds and creating the bridge between technology and the transportation system, but also becoming the risk-taking entrepreneur through its purchase of de Havilland Aircraft of Canada. What kind of rational technological assessment is possible when government is the representative of both modern technology and the transportation system?

These examples throw light not only on the central issue of the possible distortion of the transportation system by the application of modern technology, but also on the curious role of governments in these distortions. Governments have generally succumbed to the myth that any element of the transportation system can be improved by substantial doses of modern technology. In recent years, they have raised expectations on the part of the general public (especially in the cities) and particular commercial groups (such as exploration and development interests) that modern technology will vastly improve the existing transportation system, and set the stage for substantial public disappointment when the dreams do not come true. While this latter consideration is not as prominent a feature of the Arctic situation, it is equally clear that the potential exists in the Arctic to twist the transportation system out of shape by adding to it major new technology components which serve only the narrow goal of resource extraction. This dilemma will only be avoided if the federal government moves cautiously with respect to the introduction of new technology and assesses its need in terms of criteria related to the widest spectrum of national objectives.

At present much new technology is being foisted on the transportation system with little or no rational impact assessment despite the existence of reasonably well developed techniques in this area. Short-run political constraints or narrow economic considerations often appear to stand in the way of the application of transport-oriented criteria to proposed infusions of new technology. The growing literature on technological assessment seems to agree that such transport-oriented criteria would include the following:

1) estimations of travel demand (including quantity, quality and cost)
2) analysis of optimal financial and natural resource allocation
3) qualitative calculations of environmental effects
4) measurements of socio-political impacts

The future of transportation systems such as the one evolving in the Canadian Arctic will either be a story of government insisting on rational impact assessment prior to the application of new technology, or it will be a pathetic tale of aimless development and the random intrusion of new techniques and machines such as those outlined at the outset of this article. No other societal component but government can make these technological choices and it is my hope that government will be prepared to take this responsibility much more seriously over the course of the next quarter century.

Les Progrès Techniques et les Transports au Canada

par John Warren Langford Ph.D.

L'agglomération urbaine d'importance sans congestion de la circulation sera demain réalité. Des recherches sont actuellement menées afin de trouver les moyens d'accélérer le transport urbain des marchandises et des individus tout en offrant des services de première qualité capable de répondre à nos besoins sans cesse croissants.

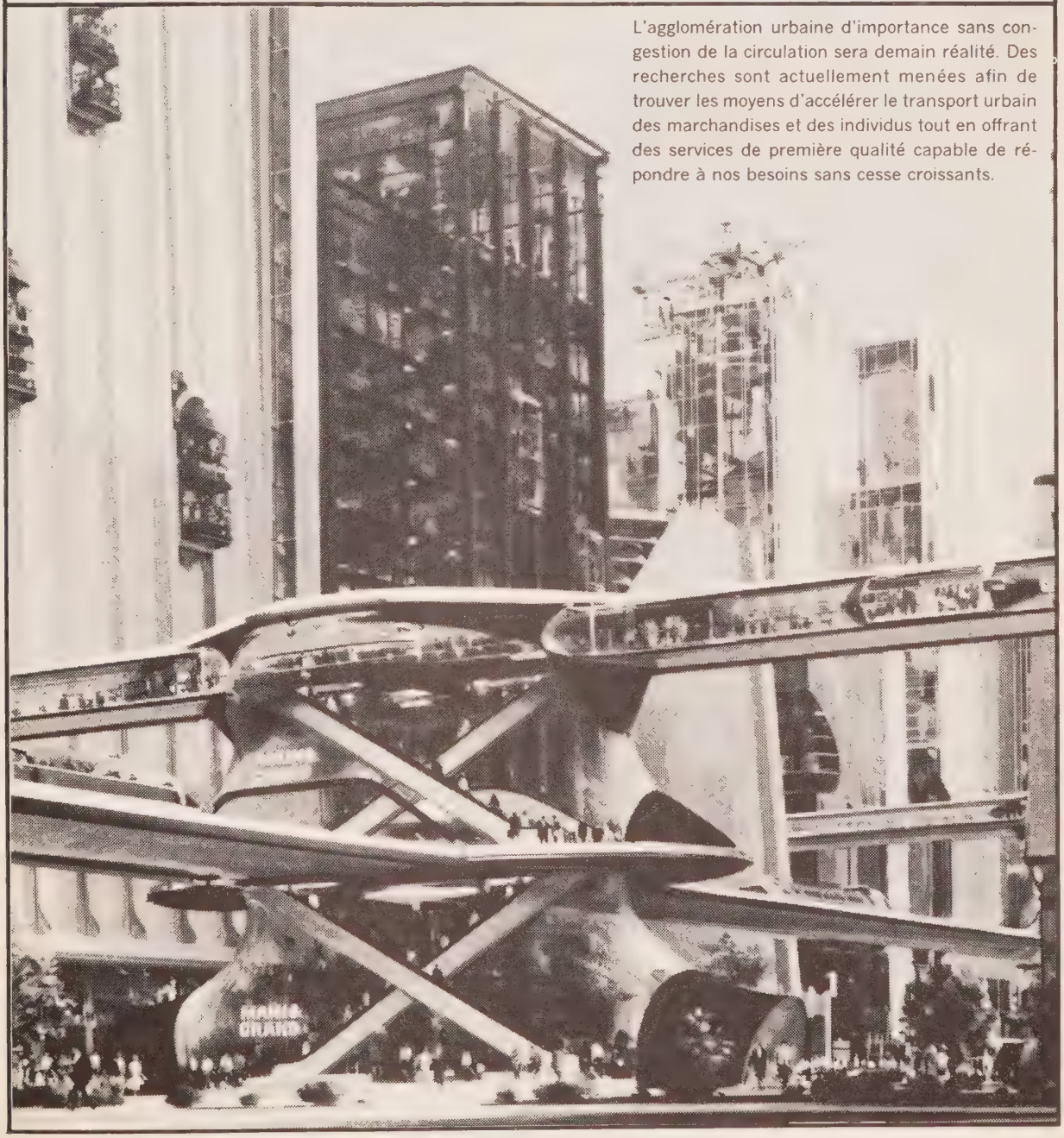


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On m'a demandé de coucher sur papier, pour le présent numéro de Transport Canada, quelques-unes de mes idées sur l'évolution technique future dans les transports. J'ai d'abord pensé qu'il s'agissait là d'une tâche assez simple. Sur mon bureau défile quotidiennement un flot interminable de journaux, de revues et ouvrages remplis des tout derniers concepts sur la façon dont l'homme se déplacera et transportera des marchandises en 1985 ou en l'an 2000. A l'heure actuelle, je m'intéresse tout particulièrement aux applications de la technologie moderne pour résoudre les problèmes de transport dans l'Arctique. Je voulais réunir ces idées afin de donner un aperçu de quelques-uns des systèmes plus ou moins fantastiques qu'on envisage pour l'avenir (tout particulièrement en ce qui concerne les transports dans l'Arctique) et d'intéresser sinon d'instruire, les lecteurs qui disposent de moins de temps que moi pour bouquiner parmi les rêves éveillés des ingénieurs, des phophètes et futurologues de notre société moderne. Mais il devait en être autrement. En m'asseyant pour décrire les problèmes et les perspectives liés à l'impact qu'auront sur notre système national de transport des machines et des techniques de l'avenir comme les dirigeables ainsi que la liquéfaction et l'expédition par air du gaz naturel, j'ai été arrêté par la nécessité de replacer toutes ces innovations axées sur l'efficacité, dans une juste perspective.

Même si la nécessité de placer les progrès techniques dans une perspective revêt une importance universelle, elle mérite actuellement une attention toute particulière en relation avec le système de transport dans l'Arctique canadien qui évolue si rapidement. Dans ce domaine, il paraît possible que la technique fasse littéralement des miracles au cours des toutes prochaines décennies. Celui qui étudie les transports dans l'Arctique est placé en face d'une myriade de merveilleuses techniques nouvelles ou ressuscitées. Si nous sommes au seuil de l'ère des brise-glaces de catégorie polaire, c'est à la suite de l'intérêt suscité par le cheminement, à grand renfort de publicité, en 1969, du Manhattan à travers le passage du Nord-ouest. La société américaine Lockheed Shipbuilding and Construction Co. est censée livrer à la Garde côtière des Etats-Unis, au début de 1975, le premier d'une paire de brise-glaces. On a conçu en Finlande les plans d'un brise-glaces polaire de 140,000 ch (au Canada, les plus gros n'ont que 24,000 ch) capable de servir à longueur d'année et le Canada étudie l'idée d'un navire à propulsion nucléaire, possiblement de catégorie similaire. Le Canada et l'Allemagne se sont aussi attachés aux problèmes et aux perspectives liés à la mise au point de cargos à étrave renforcée qui n'auraient pas besoin d'être escortés par d'autres brise-glaces. On a même indiqué au cours de la dernière campagne électorale fédérale, que le Canada allait construire un prototype d'un cargo de ce genre. De la General Dynamics Corporation des Etats-Unis nous vient une curiosité technique encore plus étonnante: un sous-marin pétrolier à propulsion nucléaire; pour être opérationnel, un tel sous-marin nécessiterait cependant l'application d'une nouvelle technique d'ensemble dans le domaine des terminaux de sous-marins au large des côtes Arctiques et des liaisons par pipe-lines avec la surface. Pour compléter ce scénario futur des transports maritimes dans le Grand-Nord, on peut mentionner des études canadiennes et américaines sur la possibilité d'utiliser des flottes de superpétroliers (plus de 1,000 pieds de long) pour acheminer du gaz naturel liquide et des hydrocarbures entre des super-ports arctiques qui n'existent pas encore et les marchés du sud. Toutes ces applications de la nouvelle technologie maritime au système de transports dans l'Arctique nécessiteraient au préalable l'établissement de techniques nouvelles ou améliorées pour la production des cartes hydrographiques

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indispensables à la navigation dans les eaux arctiques. De là, la grande utilité des récentes innovations canadiennes et américaines en matière de satellite et de radar qui permettront aux navires de disposer de renseignements beaucoup plus complets sur l'épaisseur et la concentration de la glace dans les chenaux navigables.

Le domaine du transport aérien n'est pas exempt non plus de rêves futuristes axés sur un système de transport arctique efficace. Aux Etats-Unis, la société Boeing et au Canada, le Groupe spécial des grandes plaines se sont faits les apôtres du RC-1, avion de 12 moteurs pouvant filer à 400 noeuds et transporter une charge de 2 millions de livres d'hydrocarbures ou de gaz naturel liquéfié dans des "fuseaux" détachables pré-chargés. Les experts ont établi entre 23 et 42 le nombre de ces monstres qui seraient nécessaires, selon la distance à parcourir jusqu'aux pipelines. L'Union soviétique ouvre la marche en ce qui concerne la mise au point et l'application de la technologie des dirigeables. On y utilise actuellement un petit dirigeable capable de soulever un poids de 5 tonnes et on est en train de mettre la derniére main au plan d'un dirigeable à propulsion nucléaire d'une capacité de 180 tonnes (ou de 1800 passagers) et ayant une vitesse de croisière de 190 milles à l'heure. La société Arctic Helifloat Ltd. de Calgary a dressé les plans de son Helifloat, véhicule qui combine les caractéristiques d'un dirigeable, d'un hélicoptère et d'un avion, et qui peut transporter jusqu'à 37,-000 barils de gaz naturel liquide à une vitesse de croisière de 100 milles à l'heure. Pour revenir à un domaine plus conventionnel, le ministère de la Défense nationale continue d'étudier les différents choix possibles avant de fournir un successeur ultra-moderne à l'avion de reconnaissance Argus (assumant d'importantes responsabilités de surveillance dans l'Arctique).

A mi-chemin entre le transport de surface et le transport aérien, on retrouve les véhicules à effets de surface et les véhicules à coussin d'air qui ont déjà connu un usage limité dans l'Arctique. La société Aérojet-Général Corporation of Tacoma, Washington, est en train de mettre au point des véhicules à effets de surface et des véhicules à coussin d'air qui seront affectés a des "tâches uniques" en Alaska. Les compagnies Hoverjet Inc. et Bell Aerospace (Canada) travaillent aussi sur un petit aéroglisseur qui servira à l'exploration des régions éloignées et sera utilisé par la Garde côtière. Parmi les innovations en matière de véhicule de surface proprement dit, on peut mentionner le Bechtel (Etats-Unis) Rolligon qui est muni de sacs d'air au lieu de chenilles et l'abri mobile pour l'Arctique mis au point par le Conseil de recherche pour la Défense (appareil à deux places fournissant des moyens de subsistance et une capacité opérationnelle pour des périodes pouvant aller jusqu'à 72 heures.)

Dans le domaine des chemins de fer, la technologie traditionnelle a été dépassée et plusieurs concepts tout nouveaux ont été mis de l'avant, notamment la possibilité d'utiliser des wagons-citernes à sustentation magnétique (propulsés par des turbines à gaz ou des moteurs à induction linéaire) circulant sur des monorails surélevés pour l'expédition vers le sud de gaz naturel liquide ou d'hydrocarbures. A la suite du succès de l' "Hudson Bay Railroad" et du "Great Slave Lake Railway", des études de réalisation ont été effectuées par l'Institut canadien des transports terrestres guidés et le CN/CP sur un système de train-bloc utilisable dans l'Arctique. Dans ce domaine, la concurrence la plus directe vient du pipe-line qui offre des méthodes éprouvées pour l'acheminement d'hydrocarbures et de gaz naturel et d'autres moins éprouvés tel le pipe-line de boues pour le transport des autres ressources minières. Cependant, l'amélioration des chemins de fer, des pipe-lines et des routes dans l'Arctique se heurtent toujours au problème de l'établissement d'un droit de passage dans la toundra Arctique sans détruire en même temps de délicats équilibres écologiques.

Ce bref aperçu des machines et des techniques qui sont en train d'être mises au point pour utilisation possible dans l'Arctique ne se veut nullement exhaustif. Toutefois, il est destiné à illustrer l'impact potentiel des techniques modernes sur l'un des aspects de notre système de transport national. On pourrait décrire un avenir aussi varié pour nos systèmes de transports urbains et interurbains. Ces dernières années, chaque élément du système de transport national a été étroitement enlacé par les sirènes de la technologie dont le chant est toujours le même: seule l'application permanente des fruits du progrès technologique permettra au système de transport de relever les défis qui se posent à lui. La question n'est donc pas simplement de décider lesquels des nouveaux dispositifs ou des nouvelles techniques sont les meilleurs, mais plutôt de se faire une certaine idée de la nature

des rapports entre le monde de la technologie moderne et le monde des transports. Ce n'est que dans ce contexte qu'il sera possible d'évaluer à leur juste valeur les diverses options technologiques.

Selon moi, il faut répondre à certaines questions précises avant de pouvoir déterminer dans quelle mesure le système national de transport doit être soumis aux transformations amenées par la technologie moderne. Il faut d'abord se demander pourquoi les transports reçoivent, à l'heure actuelle, autant d'attention de la part des futurologues? En second lieu, il importe de s'interroger sur le rôle croissant que joue le gouvernement pour favoriser l'application de la technologie moderne au sein du système de transport. En abordant le problème sous une autre perspective, on peut se demander si cette pénétration du système de transport par la technologie moderne ne faussera pas le système en l'associant trop étroitement à des innovations techniques dont la valeur à long terme n'est pas garantie et en concentrant ses énergies sur des objectifs économiques restreints (extraction des ressources, stimulation d'un secteur particulier de l'économie, etc.) aux dépens des buts traditionnels poursuivis dans le contexte canadien. On peut enfin s'interroger sur ce que des critères axés sur les transports suggèrent comme ligne directrice quant à la détermination des meilleurs rapports possibles entre la technologie moderne et le système de transport et à l'établissement d'un rôle utile que pourrait jouer le gouvernement pour favoriser ces rapports. Les pages qui suivent contiennent de brèves observations relatives à ces questions.

La technologie moderne représente plus qu'une quincaillerie nouvelle. Comme Jacques Ellul l'a souligné dans son oeuvre originale intitulée "The Technological Society", le phénomène de la technologie moderne est en fait "la totalité des méthodes rationnellement mises au point et ayant une efficacité absolue (à un stade de développement donné) dans tous les secteurs de l'activité humaine". En bref, même si le présent article s'intéresse davantage aux machines nées de la technologie moderne et à leur impact sur les systèmes de transport existants, la révolution technique que nous connaissons se situe sur un plan supérieur à celui des machines et touche la technique dans tous les aspects des entreprises humaines. Les effets de la technologie moderne dans ses efforts pour remplacer le pragmatisme par la méthode se traduisent en termes de techniques d'organisation, de production, de nouvelles façons de faire la guerre et même de faire l'amour. Rien n'échappe à l'emprise de la technologie moderne.

A l'heure actuelle, les transports sont soit bénis soit maudits d'être la cible principale de la technologie moderne. C'est surtout vrai aux Etats-Unis mais cela se vérifie aussi ailleurs. Les technologues s'intéressant surtout à l'avenir se sont rendus compte vers la fin des années 60, que l'ère de la guerre technologique était révolue. La fascination pour les armes et les moyens d'amener différentes fusées et bombes jusqu'aux diverses cibles s'atténuait avec l'amélioration des rapports Est et Ouest et la confusion croissante quant à la signification et l'importance de la guerre au Vietnam. Les technologues se sont alors tournés vers la scène intérieure et se sont notamment attachés aux transports. Ils se sont penchés sur de nouvelles méthodes et de nouvelles machines capables de faire revivre les transports urbains, de rendre aux chemins de fer leur ancienne popularité et d'engager l'industrie du transport aérien dans une ère d'avion supersonique et de voyage par fusée. L'intérêt s'est surtout porté sur le transport de voyageurs. Les gouvernements ont favorisé la naissance de ces nouvelles machines et de ces nouvelles idées parce qu'il était évident que celles-ci stimuleraient la producation et la croissance économiques. Voilà ce qu'a été l'évolution. Mais le progrès de l'économie grâce à l'application des nouvelles techniques n'est pas nécessairement synonyme de progrès du système des transports. Une foule d'idées futuristes, commanditées par les gouvernements à cause de l'influence positive qu'ils en espéraient tant sur l'économie que sur le système des transports n'ont pas répondu aux espérances. Par exemple, les véhicules à sustension magnétique dotés de moteurs à induction linéaire étaient le fer de lance d'un effort pour révolutionner l'économie de l'Ontario. Il s'agissait de libérer l'industrie ontarienne spécialisée dans les tranports, de sa dépendance étroite face à la production automobile de style "Détroit". L'Ontario devrait alors devenir le lieu de naissance d'une nouvelle industrie de fabrication dans le domaine des transports urbains et interurbains et, grâce au marché et à l'aide financière fournie par le gouvernement fédéral et les autres provinces, devait se tailler une place sur le marché mondial. De plus, un nouveau réseau de transports en commun utilisant des véhicules à sustentation magnétique dotés de

moteur à induction linéaire aurait éventuellement résolu les problèmes de transport du grand Toronto. Le malheur, c'est que rien n'a fonctionné comme prévu. L'escalade rapide des dépenses d'investissement associée à des problèmes techniques concernant les systèmes de commande, de sustentation et de propulsion ont fait planner un doute tant sur la viabilité de ce système de transport en commun automatisé que sur les critères utilisés pour son choix. Le cas des avions à décollage et atterrissage court (ADAC) est un autre exemple. L'appui accordé par le gouvernement fédéral à la mise au point des avions ADAC est largement motivé par l'espoir de mettre sur pied au pays une industrie aéronautique de pointe qui constituerait l'élément-clé d'une économie technologiquement avancée. Malheureusement, le système de transport intérieur est contraint de jouer un rôle important dans cette renaissance, à savoir l'utilisation d'avions ADAC pour la liaison interrurbaine Toronto-Ottawa-Montréal et cela même si ce système, de toute évidence, ne répond nullement à la demande d'un mode de transport peu coûteux, fiable et confortable, pouvant transporter un grand nombre de personnes à la fois. Dans le cadre de ces efforts pour favoriser la naissance de cette nouvelle technologie des transports, le gouvernement fédéral ne se contente pas uniquement de fournir les fonds nécessaires à la construction de ces nouveaux avions et de faire le lien entre la technologie et le système de transport, mais il devient aussi l'entrepreneur qui prend les risques en raison de son acquisition de la compagnie de Havilland Aircraft of Canada. Y a-t-il une évaluation technologique rationnelle possible lorsque le gouvernement est à la fois le représentant de la technologie moderne et celui du système de transport?

Ces exemples mettent en lumière le problème crucial de l'altération du système de transport par l'application des techniques modernes aussi bien que le rôle curieux des gouvernements dans cette altération. Les gouvernements sont généralement devenus obnubilés par le mythe voulant que n'importe quel élément du système de transport peut être amélioré par l'application de doses substantielles de technologie moderne. Ces dernières années, ils ont suscité chez le grand public (spécialement dans les villes) et chez des groupes commerciaux particuliers (comme ceux qui s'occupent d'exploration et de mise en valeur) l'espoir que la technologie moderne améliorerait considérablement le système de transport actuel, ce qui pourrait susciter parmi le public une grande déception si ces rêves ne se concrétisent pas. Même si cela ne s'applique pas tellement à la situation dans l'Arctique il n'en reste pas moins qu'il est possible, dans le Grand nord comme ailleurs, de fausser le système de transport par l'application de quelques importantes techniques nouvelles axées uniquement sur l'extraction des ressources. La seule façon de faire disparaître ce dilemme est que le gouvernement fédéral fasse preuve de prudence quant à l'implantation de nouvelles techniques et évalue ses besoins en fonction de critères tenant compte de toute la gamme des objectifs nationaux.

A l'heure actuelle, une grande partie de la technologie nouvelle est implantée dans le système de transport sans évaluation rationnelle préalable de l'impact qu'elle pourrait avoir, et cela, même s'il existe déjà des techniques assez élaborées dans ce domaine. On a souvent l'impression que des contraintes politiques à court terme ou des considérations économiques à courte vue font obstacle à l'utilisation de nouvelles techniques en ne reconnaissant pas les critères de transports nécessaires. La lecture des ouvrages de plus en plus nombreux qui traitent de l'évaluation technologique semble impliquer que de tels critères devraient comprendre:

1) des estimations de la demande de voyage (y compris la quantité, et le coût);
2) l'analyse d'une affectation optimale des ressources naturelles et financières;
3) la détermination qualitative des effets écologiques; et
4) l'appréciation des impacts socio-politiques.

L'avenir des systèmes de transport, y compris celui de l'Arctique canadien, sera soit l'histoire d'un gouvernement mettant l'accent sur l'évaluation rationnelle de l'impact des nouvelles techniques avant leur application, soit le récit pathétique d'un développement désordonné et de l'implantation au hasard de nouvelles techniques et de nouvelles machines comme celles que nous avons décrites plus haut. Le gouvernement est la seule structure sociale qui puisse faire ces choix et j'espère que le nôtre se montrera prêt à assumer cette responsabilité beaucoup plus sérieusement au cours du prochain quart de siècle.

FUTURE TECHNOLOGY FOR CANADA'S RAILROADS

BY JOHN GRATWICK



Speedy delivery of containers in future is visualized in this artist's conception of a container, removed from a flatcar by helicopter and on its way to a modern storage depot.

While admitting that Canada's major rail networks will need to implement some new or improved technologies if they are to meet anticipated traffic demands over the next two decades, I would hasten to point out that the development of new, sophisticated, space age technology is not, as is widely believed, the solution to the railway's problems. Most of the technology required to improve the efficiency and effectiveness of our railway system is already available and has either been proved in service or is readily adaptable to rail needs. Our technology, no matter how capably devised, requires a great deal of capital to translate it into effective action. Hopefully, an economic environment favourable to such progress will emerge.

The Canadian freight market is growing at such a rate that by 1985 it is estimated that it will be about twice the 1974 level. The steel wheel on the steel rail still has a bright future if research and development and engineering are progressed vigorously in combination with other forms of transport. While existing transportation systems may well continue to meet our needs in the immediate years ahead, future needs will require new technology and new developments. What then are we realistically likely to see in terms of technological developments in the next few decades?

Technological innovations are likely to be 'evolutionary' rather than "revolutionary". In Canada, the diesel electric locomotive will be the prime power source for some time to come. Improvements will occur in efficiency of engines, particularly in reliability, railwheel adhesion (i.e. tractive effort) and in reduction of exhaust emissions. Although the diesel locomotive is not a prime source of pollution, improvements to reduce exhaust emissions through better combustion control will occur. If you regard the State of California standards for 1975 as perhaps as stringent as any, present diesel equipment will meet these standards with the exception of emissions of oxides of nitrogen. Here is an excellent area for research to develop a relatively cheap and reliable method of reducing nitrogen emissions from large prime diesel power sources.

Interest in electric traction will receive considerable attention in North America. There are several reasons for this. With power available along the entire length of a string of moving vehicles such as a train, the opportunity for control of the moving mass is greatly enhanced; secondly, and speaking generally, maintenance costs for electric traction are condiderably reduced compared with diesel power, and thirdly electric traction offers freedom from pollution and a degree of noise reduction not possible with present diesel equipment.

The main inhibition to the more rapid development of electric traction in Canada has been the factor of cost resulting from the very large capital investment required for the fixed installations. For example, between Montreal and Toronto it had been estimated that the traffic volume would probably need to double or triple to make electric operation viable in terms of the basic economics of transportation prevailing in North America. It is likely, however, due to the major increase in the cost of diesel fuel and possible fossil fuel shortages that in some areas of heavy population and traffic density in both the North East corridor of the United States and the Canadian Toronto-Windsor corridor that electric operation is close to becoming economically attractive. One possible development that could hasten the move to electrically-operated trains in Canada is some form of on-board electrical storage. Not only would this enable the branch and spur lines to be served without additional investment in power supplies and catenaries, it would in addition offer the possibil-

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ity of reducing the installations needed on main lines. A third benefit would flow from the ability to regenerate and store electricity when braking, thus reducing total consumption. It is not clear at present whether it will be batteries or flywheels that will prove to be the most effective solution to the storage problem, but a successful development presents Canada in particular with both an opportunity and benefits. Rolling stock will also show evolutionary improvements in terms of components and design. There will be increasing numbers of specialized types of cars to better serve customer product needs.

A great deal of research effort is now being carried out and will increase on the performance and design of car trucks or bogies in respect to their riding qualities and ability to negotiate track safely at higher speeds and with greater loads. Braking systems will receive a great deal of attention. With heavier tonnages moving at higher speeds, present air-activated and wheel-tread braking systems have reached a point of diminishing effectiveness. New types of electro-pneumatic and disc brake systems will be developed adaptable to the size, weights and operating conditions of North American equipment.

The rail guideway or track will continue to show improvement in rail and tie quality. In retrospect, the present track structure which was developed basically at the turn of the century, has been quite an impressive piece of engineering when one considers that it has remained relatively unchanged over nearly three quarters of a century and has performed in a really remarkable manner.

However, deficiencies are starting to appear in the design as weights and speeds of motive power and rolling stock have steadily increased. Oddly enough while we think we know a great deal about the properties of track in its static condition, very little is known of its properties under dynamic conditions in contact with the moving vehicle. While a great deal of very excellent theoretical work has been carried out in Europe (particularly in Great Britain) and in Japan in what we might call "rail-wheel interaction", the translation of this theory into practical application under North American conditions still requires extensive research. New types of track structures will appear having the greater strength and stability required for heavier trains operating at higher speeds. Concrete ties, already widely used in Europe and Japan, have not been used extensively in North America primarily due to their relatively high initial cost as compared to wood. However, they will find increasing application due to the shortage (and rapidly escalating cost) of satisfactory wood ties. New forms of track structure will appear such as rail embedded in continuous concrete slabs laid by slip-form paving techniques.

Communications and control systems for train operations continue to be based on conventional technology such as wire-line hardware and radio communications linked together into Centralized Traffic Control systems. While these have permitted more orderly movement of equipment over the rail networks, we necessarily see some dramatic changes in this technology in the next few years.

Present signalling equipment will likely be replaced by some form of guided-radar or induction system to provide direct control of the moving train. The British and Japanese have already made substantial research efforts in this area. Let us look for a moment at what we might see in a freight train movement between two major terminals such as Toronto and Montreal.

The engine driver would be briefed on the general conditions of the run, much like an airline pilot. He would insert a program into a console on the lead power unit which would provide essential information to assist him in operating the train. This might include:

(1) Speed control data to facilitate the run over the required time span.

(2) Track strength and condition information which has been determined previously by periodic and frequent measurement with electronic test cars.

(3) Track profile information which will automatically adjust power and braking to ensure optimum power consumption over the length of the run.

(4) Information on equipment and load characteristics within the train as it could affect forces exerted in the string of moving vehicles.

(5) Weather information to provide optimum

train operation depending on rail conditions.

Much of the basic technology is, of course, already available and some of it is in limited use in North America.

What I have been describing to this point has been essentially trends in hardware development. But before maximum utilization can be made of these developments, another major development must and will occur. This is in the further application of systems research, or perhaps the broader area of cybernetics, to transportation. Someone has said that perhaps the railway was a technological development many years ahead of its time; that, in reality, it could be considered a conveyor system on wheels moving goods and people over relatively long distances from point of origin to point of destination. Now, of course, no one would ever be so foolish as to claim that our rail network has even remotely approached the efficiency of a conveyor system. But the obvious benefits which could accrue if the rail network could operate in this fashion are easy to define, such as the smooth flow of goods from origin to destination, guaranteed deliveries, reduction of inventories for both producer and consumer and, in general, much reduced costs of transportation, and so on. The problem, however, is extremely difficult to solve. Among the factors involved, are:

(1) The difficulty of obtaining reliable and timely information on the demand for cars.

(2) The problem of obtaining reliable information on the supply of cars - this must be available within an adequate time frame to allow movement of equipment that may be required.

(3) The control of car movements in a fleet of cars in excess of 200,000 in Canada alone, a large proportion of which are continuously in interchange with a fleet of some 2,000,000 cars in the U.S.

(4) The large variety of cars required by shippers and the large number of points throughout Canada at which cars become available or are required.

Already, traffic control systems and methods for movement of goods, such as the intermodal and unit train concepts, have started to contribute effectively to freight transportation.

Extensive work is going into developing real time information systems using computers extensively to handle the broader system-wide information flows for control and monitoring the movement of traffic. The potentialities of minicomputers to handle the more immediate process control activities in segments of the system such as yards and terminals are being actively explored. Electronic means of identifying cars and their locations, and interfacing this information with real time control systems has already been implemented on some parts of CN and is being progressively implemented across the balance of Canada.

By 1985, it is estimated that intermodal transport systems will account for the movement of almost half the goods carried in Canada. What is developing is the evolution of the railway companies into broadly based transportation enterprises operating a variety of transport modes and offering a range of integrated transport services. The revolution which has occurred in the movement of containers in the past few years is a typical example which is permitting a smooth flow of goods by air, ship, rail and road from almost any point of origin to any point of destination.

Adequate management information and control systems will enhance the unit train concept which is already moving massive quantities of coal, sulphur and ores to market on a regularly scheduled cyclical basis. These information and control systems will result ultimately in a broad range of services not possible today, such as shorter trains by-passing terminals and operating directly between consignee and consignor, automatic trains and trains of much higher speeds than we know today.

Let us turn for a few moments to developments we see in the transportation of people. Again, I would like to confine my remarks mainly to the Canadian scene.

The impetus for development of new guided ground systems has arisen for many reasons, including:

(1) Concern over the rapid escalation of congestion in the so-called corridor areas of

heavy population such as our 715-mile corridor between Quebec City and Windsor, Ontario, and the American North East Corridor between Boston and Washington.

(2) The rapid decline in the present rail passenger business as a result of intense competition primarily from the private automobile but also aircraft and bus transport.

(3) The more recent concern with pollution and fuel shortage problems.

In Canada, the major planning to date for new systems has centered mainly around the Quebec-Windsor corridor, which contains half the Nation's population. But to place the problem in some perspective, Canada's growing 'megalopolis' is the least densely populated of the three major intercity rail corridors in the world. Its population of 14,000 persons per linear mile is less than one seventh that of the North East Corridor of the U.S. or the Japanese Tokyo-Osaka corridor, or the British corridor (London to Leeds, Manchester or Liverpool). These three all have a population per linear mile of about 100,000. Canada's relatively low population accounts for the fact that there has not been the congestion and inter-city travel restraints that other countries have had to face.

In light of these facts it is evident that a high speed exclusive passenger line cannot yet

A dirigible may play an important role in tomorrow's world of construction and industry. A dirigible might be utilized to move heavy and bulky pieces of construction equipment into inaccessible areas.



be economically justified and our first requirement is for a more frequent, reliable service using the most modern conventional equipment incorporating current generation proven technology. This will probably be followed by a Mark II Turbo or a domesticized version of the French Turbo or the British APT. The new LRC concept presently under development by a Canadian consortium will be a contender when its prototype testing is completed. Speeds of 120 to 140 mph on existing alignments will probably be adequate in the immediate future. Attaining these speeds will, however, require either the grade separation or the development of fail-proof protection of all existing road crossings.

The fact that relatively conventional rail passenger equipment is likely to be used for some time to come, does not mean that there will not be intense interest in the newer, more exotic modes of ground transport such as the tracked air-cushion vehicles or the more recent magnetic levitation devices which in Germany have already reached the prototype stage.

Although it is the subject of much controversy, it is generally conceded that the maximum practical speed of the steel wheel on the steel rail is probably in the order of 180-200 miles per hour. Once these speeds are exceeded, some form of air-cushion or magnetic suspension will be required.

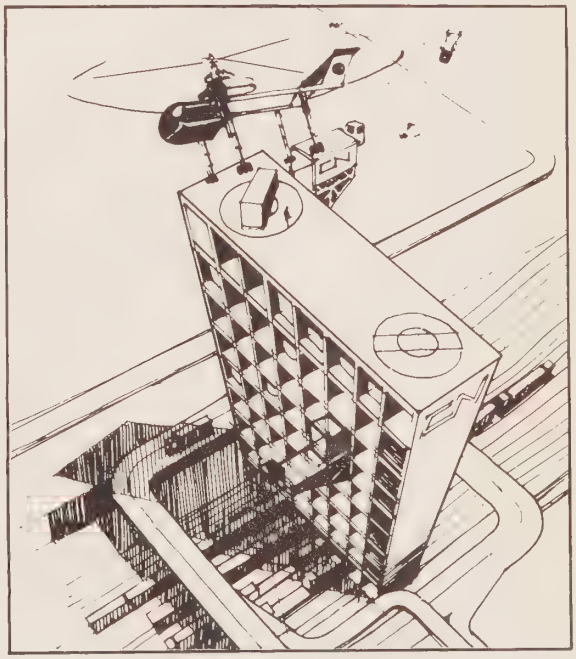
A pioneering guided air-cushion development was the French Intercity Aerotrain, a first generation TACV which travels on an inverted T-shaped guideway. Four air cushions support the vehicles and another four are used to apply air pressure against the upright arm of the "T" for guidance. The unit is powered by two gas turbines driving a propellor. Noise is one of the problems of these units, but it can be powered by linear induction motors which are currently under development in several countries. No operational application of the Aerotrain is in sight, and recently the British cancelled further developent of the Tracked Hovercraft Ltd. machine. Apart from environmental problems, the basic efficiency of the air cushion suspension appears to be lower than for magnetic levitation.

Present developments in 'maglev' indicate that it could be a workable alternative by the mid 1980's. The low speed version under development by the Ontario Transportation Development Corporation will provide valuable insights and experience with this new technique, as well as an evaluation of its capability under Canadian climatic conditions.

Finally, I would like to leave with you one additional thought. The opportunities and problems afforded by the new trends and technology in guided ground transport underline the need for increased technical, economic and social research. Undoubtedly scientific and engineering research is fundamental to the nature of transportation systems and new systems require an intensification of such research in both its practical and theoretical aspects. But engineering success alone is insufficient. Economic, social and political effects are just as important to the success of such systems.

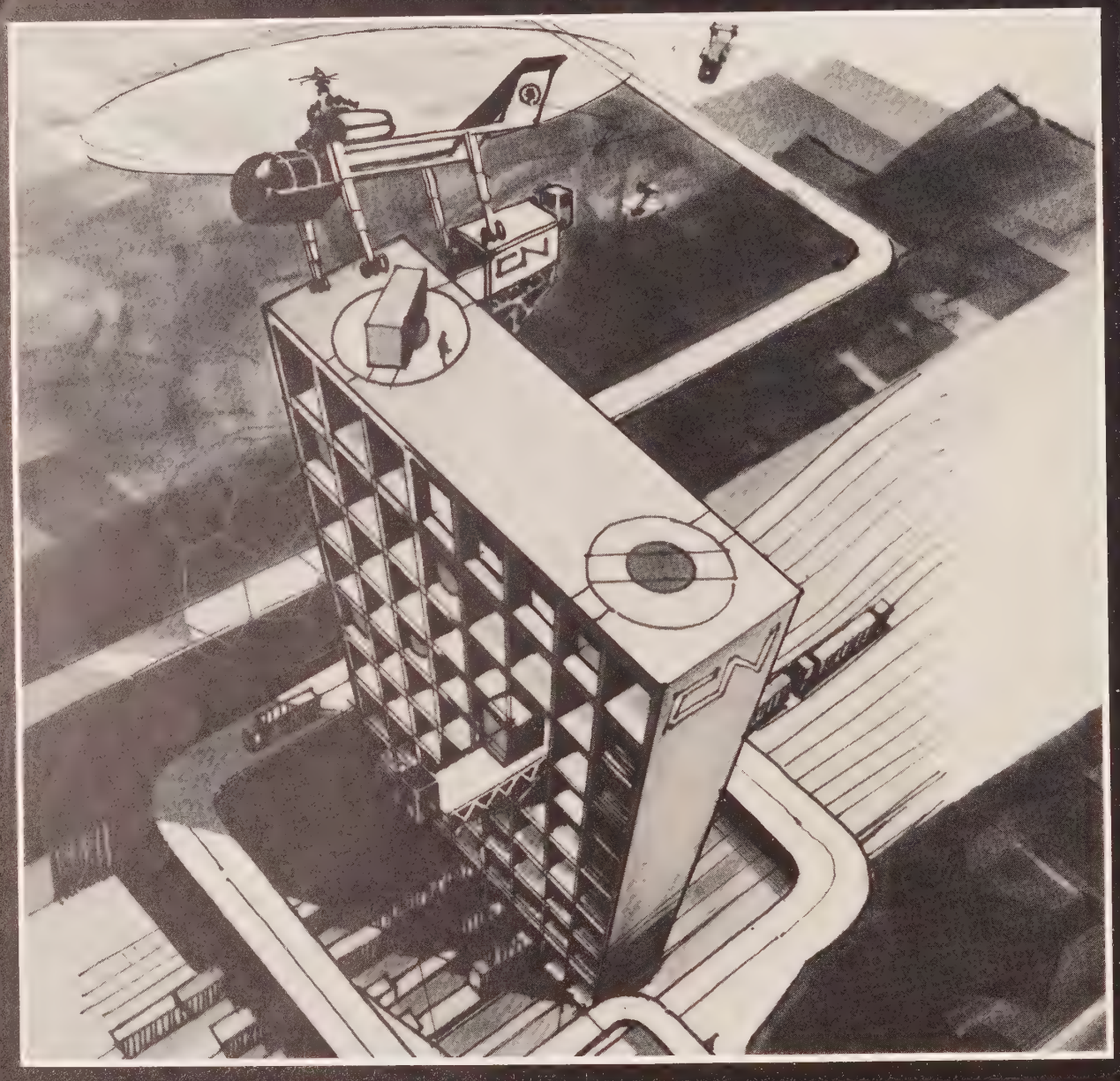
I believe that the solution to our problems in guided ground transport systems — many of which are peculiar to the Canadian environment — should come from Canadian initiative. Thus a prime need of Canada's transportation development is intensified, integrated interdisciplinary research and an assured supply of well qualified people.

A container has just been delivered to the roof of a storage plant of the future. It will find its way to one of the storage cubicles by hoist, which can be seen half way up the building.



L'AVENIR TECHNOLOGIQUE DES CHEMINS DE FER CANADIENS

PAR JOHN GRATWICK



Le conteneur de demain sera transporté du wagon de chemin de fer à l'entrepôt par voie des airs. Des ascenseurs déposeront le conteneur dans la cellule désignée, pour la période de temps nécessaire.

Les grands réseaux ferroviaires canadiens devront sans doute adopter de nouvelles techniques pour pouvoir répondre aux besoins du trafic des vingt prochaines années, mais je m'empresse de dire que la solution aux difficultés des chemins de fer ne réside pas, contrairement à ce que l'on croit généralement, dans l'application de techniques des plus avancées ou futuristes. La plupart des techniques nécessaires à l'amélioration de notre réseau ferré existent; elles ont déjà fait leurs preuves, ou peuvent les faire à tout moment.

Le marché canadien du fret croît à un tel rythme que l'on prévoit, en 1985, le voir doubler ses niveaux actuels; la roue et le rail d'acier auront donc un avenir brillant si les recherches et le génie encouragent vigoureusement ce mode, en complémentarité avec les autres modes de transport. Les réseaux de transport actuels suffiront pendant plusieurs années encore, mais il faut bien admettre que de nouvelles techniques et de nouveaux développements seront bientôt nécessaires. Nous allons tenter d'identifier les progrès techniques probables dont nous serons témoins d'ici la fin du siècle.

L'apparition de techniques révolutionnaires semble peu probable. Au Canada, la locomotive Diesel électrique continuera d'être la puissance motrice principale. Nous verrons probablement une amélioration du rendement des locomotives, notamment de la fiabilité, de l'adhésion rails-roues (l'effort de traction) et une réduction des gaz d'échappement. Bien que la locomotive Diesel ne soit pas particulièrement polluante, il y aura cependant des améliorations qui diminueront les gaz émis grâce à un meilleur contrôle de la combustion. Par exemple, le matériel Diesel actuel satisfait déjà, sauf pour les émissions d'oxydes d'azote, aux normes californiennes de pollution pour 1975, qui sont pourtant considérées très strictes. La mise au point d'une méthode sûre et peu coûteuse pour une combustion plus efficace et une réduction des émissions d'azote des gros moteurs Diesel devrait faire l'objet d'efforts de recherche importants.

La propulsion électrique s'attirera beaucoup d'intérêt en Amérique du Nord et pour plusieurs raisons. Si la puissance est disponible sur toute la longueur d'une série de voitures en mouvement comme celles d'un train, la commande de cette masse mobile en est d'autant facilitée; ensuite, et de façon générale, le coût d'entretien du matériel à propulsion électrique est beaucoup plus bas que celui du matériel Diesel; enfin, l'électricité ne produit aucune pollution et réduit le bruit à des niveaux encore irréalisables avec le Diesel.

L'obstacle principal à la création rapide de matériel à propulsion électrique au Canada a été l'élément coût, provenant de l'important investissement de capitaux nécessaire aux installations fixes. D'après les calculs, le trafic Montréal-Toronto devrait doubler ou tripler pour rendre économiquement viable le matériel électrique entre ces deux villes dans le cadre économique actuel des transports nord-américains. Toutefois, l'augmentation considérable du coût du combustible Diesel et la possibilité d'une pénurie de combustibles fossiles rendront probablement l'exploitation électrique économiquement alléchante dans certaines régions à grande densité de population et de trafic, comme le corridor nord-est des États-Unis et le corridor Toronto-Windsor. L'exploitation de rames électriques au Canada pourra être facilitée par la mise au point d'une technique d'accumulation électrique à bord du train. Non seulement une telle technique permettrait-elle de desservir les embranchements et voies de desserte sans investissements supplémentaires en postes d'alimentation et caténaires, mais elle offrirait également la possibilité de réduire les installations nécessaires sur les lignes principales. Elle permettrait enfin de produire et d'accumuler l'électricité lors

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du freinage, diminuant ainsi la consommation totale. A l'heure actuelle, il est difficile de dire si des batteries ou des volants d'entraînement constitueront la meilleure solution au problème de l'accumulation, mais une telle réalisation offrirait, au Canada en particulier, des avantages indéniables.

Le matériel roulant sera probablement amélioré au point de vue de sa diversité d'éléments et du design. Les wagons spécialisés seront plus nombreux pour mieux servir les besoins de la clientèle. L'on consacre actuellement beaucoup de recherche au rendement et à la construction des voitures ou des bogies en ce qui concerne la qualité du roulement et la sécurité d'adhésion en accélération et devant l'augmentation du poids des chargements. Les freins feront l'objet d'études importantes. Vu l'augmentation du poids des chargements et des vitesses, les systèmes de freinage actuels, à déclenchement pneumatique ou à effet sur la surface de roulement de la roue, sont de moins en moins satisfaisants. D'autres types de freins, électro-pneumatiques ou à disque, seront mis au point et adaptés aux dimensions, aux poids et aux conditions d'exploitation du matériel nord-américain.

La voie ferrée continuera d'être améliorée quant à la qualité des rails et des traverses. De fait, le chemin de fer n'a pas tellement changé depuis le début du siècle et il faut bien admettre qu'il a rendu des services remarquables et a fait preuve d'une qualité de construction impressionnante.

Toutefois, les lacunes du rail conventionnel sont apparues avec l'augmentation des charges et des vitesses du matériel roulant. Fait notable, tandis que nous croyons connaître tout des propriétés statiques de la voie, nous n'en savons que très peu sur son comportement dynamique sous l'effet des trains en mouvement. Bien que des recherches théoriques poussées aient été effectuées en Europe, particulièrement en Angleterre, ainsi qu'au Japon, sur ce qu'il conviendrait d'appeler l'interaction rail-roue, l'application de ces théories aux conditions nord-américaines nécessitera des recherches importantes.

De nouveaux types de rail feront leur apparition et auront la force et la stabilité nécessaires pour les trains plus lourds et plus rapides. Les traverses de béton, déjà largement utilisées en Europe et au Japon, n'ont pas été beaucoup utilisées en Amérique du Nord principalement à cause du coût initial relativement élevé par rapport au bois. Toutefois, leur utilisation s'accroîtra du fait de la pénurie et du coût considérable des traverses de bois. De nouvelles formes de voies ferrées apparaîtront, par exemple des rails encastrés dans des dalles de béton posées grâce à des techniques d'épandage à coffrage coulissant.

Les systèmes de communication et de commande des opérations ferroviaires sont basés sur les techniques conventionnelles telles que les fils et les radios reliés à des systèmes centralisés de contrôle de la circulation. Ces moyens assurent déjà des transports plus ordonnés sur les réseaux ferroviaires, mais il sera nécessaire d'effectuer des changements techniques radicaux au cours des prochaines années.

Le matériel de signalisation actuel sera probablement remplacé par une sorte de système radar ou à induction qui fournirait une commande directe du train en mouvement. Les Anglais et les Japonais ont déjà fait d'importantes recherches dans ce domaine.

Prenons l'exemple d'un train de marchandise circulant entre deux terminaux importants comme Toronto et Montréal. Le conducteur serait informé des conditions générales du parcours, un peu à la manière des pilotes de lignes aériennes. Il fournirait un programme à la console de l'unité motrice en tête qui lui donnerait les renseignements essentiels à la conduite du train. Ces renseignements pourraient comprendre:

1. les données de contrôle de la vitesse pour faciliter l'exécution du trajet dans les délais prescrits,
2. des renseignements sur la force et l'état de la voie, établis au préalable par des mesures périodiques et fréquentes à l'aide de voitures d'essais électroniques,
3. des renseignements sur le profil de la voie, en vue d'automatiser l'alimentation et le freinage et assurer une juste consommation d'électricité sur toute la longueur du parcours,
4. des données sur les caractéristiques du matériel et du chargement dans la mesure

où elles peuvent influencer la rame des voitures tirées,

5. la météo, pour assurer la meilleure conduite du train selon l'état des rails.

Nombre de ces techniques de base sont, bien sûr, disponibles et déjà utilisées en Amérique du Nord, quoique sur une échelle réduite.

Jusqu'ici je n'ai décrit que les tendances d'amélioration du matériel. Mais l'utilisation optimale de ces développements doit être précédée d'un autre développement d'une importance majeure. Il s'agit des recherches sur l'application des systèmes, et peut-être de l'ensemble de la cybernétique, aux transports. Quelqu'un a dit que le chemin de fer correspondait peut-être à un développement technologique des plus avancés, puisqu'on peut le considérer comme un système de convoyeur sur roue pouvant transporter marchandises et voyageurs sur des distances relativement longues entre deux points précis. Bien sûr, personne n'aurait l'audace de prétendre que notre réseau ferroviaire atteint, même de loin, l'efficacité d'un système de convoyeur. Mais il est évident qu'un réseau ferroviaire fonctionnant sur ce principe offrirait des avantages considérables, tel que le mouvement rapide et sûr des marchandises entre deux points, des livraisons garanties, la réduction des inventaires au profit du producteur et du consommateur et, en général, une diminution appréciable du coût des transports. Toutefois, l'application pratique présente des difficultés énormes, car il faut tenir compte de facteurs tels que:

1. la difficulté d'obtenir des renseignements sûrs et opportuns sur la demande de wagons,
2. les problèmes reliés à l'obtention de renseignements sûrs et fiables sur l'approvisionnement des wagons; ces renseignements devraient être fournis dans des délais assez brefs pour permettre le mouvement du matériel jusqu'à l'endroit voulu,
3. le contrôle du mouvement des wagons d'un parc canadien qui dépasse les 200,000 et dont une bonne partie est en échange constant avec le parc américain de quelque 2,000,000 de wagons,
4. la grande diversité de wagons nécessaires aux expéditeurs, et le grande nombre de points à travers le Canada où des wagons peuvent être disponibles ou nécessaires.

Déjà, les systèmes de contrôle du trafic et les méthodes de transport des marchandises, telles que les transports intermodaux et les trains unitaires, ont commencé à améliorer l'efficacité du transport des marchandises.

On travaille actuellement à la mise au point des systèmes informatiques en direct, faisant un usage considérable d'ordinateurs pour traiter un plus grand nombre de données en vue de la commande et du contrôle du trafic. On étudie de près aussi la possibilité de confier à des mini-ordinateurs la tâche du contrôle et de la commande immédiate dans les parties du système telles que les gares de triage et les terminaux. Des moyens électroniques d'identification et de localisation des wagons et l'apport de ces renseignements à des systèmes de commande en direct ont déjà été réalisés dans certaines parties du réseau CN et seront progressivement adoptés partout au Canada.

On prévoit que les réseaux de transports intermodaux transporteront environ la moitié du fret canadien en 1985. Il semble en effet que les sociétés de chemin de fer soient en train de devenir des entreprises de transport à grande échelle exploitant plusieurs modes et offrant toute une gamme de services de transport intégrés. La révolution récente des conteneurs en est un exemple typique; elle permet le transport sûr et rapide des marchandises par air, eau, rail et route vers toutes les destinations.

Des systèmes informatiques et de contrôle suffisants permettront de perfectionner les trains unitaires qui, déjà, transportent régulièrement et de façon cyclique des quantités considérables de charbon, soufre et minerai à leurs marchés respectifs. Des systèmes informatiques et de contrôle permettront éventuellement la fourniture d'une gamme étendue de services encore impensables, tels que des trains plus courts allant directement de l'expéditeur au destinataire, des trains automatiques et des trains circulant à des vitesses plus élevées.

Passons maintenant au développement des transports de voyageurs, nous limitant encore une fois au Canada.

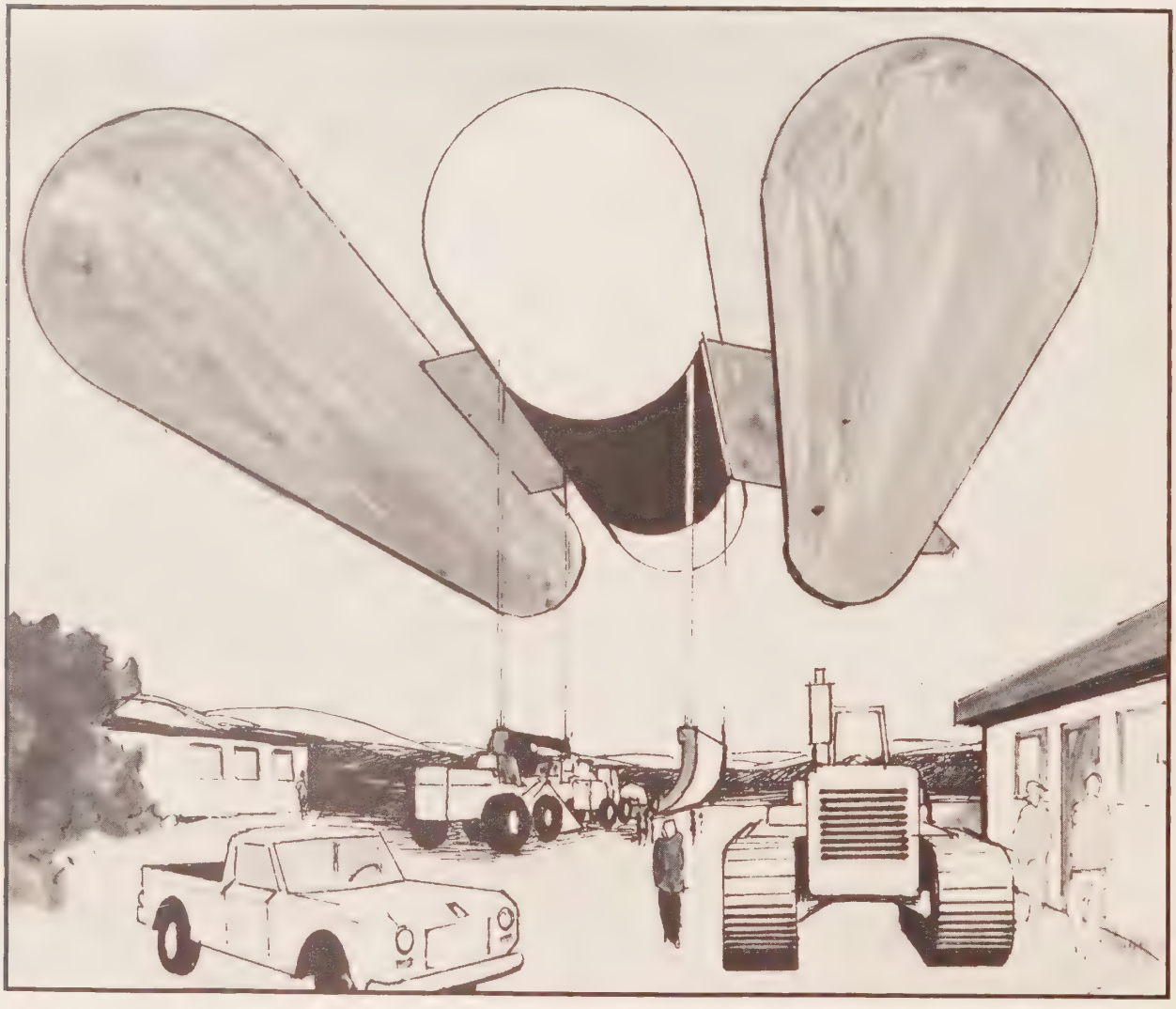
La mise au point de nouveaux systèmes de transports de surface guidés a été encouragée pour plusieurs raisons, notamment:

1. l'inquiétude causée par la fréquence et l'ampleur de la congestion dans les zones dites de corridor à population dense, telles que le corridor de 715 milles allant de Québec (Qué.) à Windsor (Ont.) et le corridor américain nord-est allant de Boston à Washington,
2. le déclin rapide du chiffre d'affaires des services ferroviaires de voyageurs à cause de la concurrence intense causée surtout par la voiture privée, mais aussi par l'avion et l'autobus,
3. l'intérêt plus récent pour les problèmes de la pollution et de la pénurie du pétrole.

Au Canada, la majorité des programmes de planification de nouveaux systèmes vise surtout le corridor Québec-Windsor, qui contient la moitié de la population du pays.

Pour replacer le problème dans son vrai contexte, il importe de savoir que le corridor canadien, bien qu'en pleine croissance, est beaucoup moins densément peuplé que les trois principaux corridors ferroviaires interurbains du monde. Sa densité de 14,000 habitants par mille de distance est au moins sept fois inférieure à celle du corridor nord-est des États-Unis, du

Produit du siècle précédent, le dirigeable pourrait voir sa consécration dans le prochain siècle. Il offrirait pour le transport de l'équipement lourd dans des régions difficiles d'accès des qualités remarquables, tel aisance et maniabilité.



corridor Tokyo-Osaka du Japon ou encore du corridor anglais allant de Londres à Leeds, Manchester ou Liverpool. Ces trois corridors ont une population par mille d'environ 100,000 habitants. La population relativement faible du Canada explique le fait qu'il n'y ait pas eu ici de problèmes de congestion ni de limitation des transports interurbains rencontrés dans d'autres pays.

A la lumière de ces faits, il est évident qu'un service ferroviaire de voyageurs à haute vitesse ne peut être, pour l'instant, justifié du point de vue économique et que le premier besoin est d'assurer un service fréquent et fiable à l'aide du matériel conventionnel le plus moderne incorporant les meilleures techniques actuelles. Ce stade de développement sera probablement suivi d'un train turbo français ou de l'APT britannique. Le concept LRC, actuellement mis au point par un consortium canadien, deviendra un rival important lorsque les essais des prototypes auront été complétés. Des vitesses de 120 à 140 milles à l'heure sur les rails existants seront probablement suffisantes dans l'avenir immédiat. Par contre ces vitesses ne pourront être atteintes qu'en limitant les difficultés actuelles des passages à niveau, soit par étagements de voies, soit par la mise au point de systèmes de protection infaillibles.

Le fait qu'un matériel ferroviaire de voyageurs relativement conventionel sera probablement utilisé pour quelque temps encore ne veut pas nécessairement dire qu'il n'y aura pas d'intérêt pour des modes plus nouveaux, plus éloignés des transports de surface, tels que les véhicules à coussin d'air guidés ou encore, plus récemment, les appareils à sustentation magnétique qui ont été mis au point en Allemagne.

Bien que la question soit encore bien controversée, l'on concède généralement que la vitesse maximale réalisable sur rails au moyen de roues d'acier est de l'ordre de 180 à 200 milles à l'heure. Si l'on veut dépasser ces vitesses, il faudra avoir recours à la sustentation magnétique ou au coussin d'air ou autre procécé du genre.

Les premiers essais d'appareils à coussin d'air guidés ont été faits avec l'Aérotrain français, un appareil de première génération qui utilise une infrastructure de béton en forme de T inversé. Quatre coussins d'air soutiennent le véhicule et quatre autres appliquent une pression d'air sur la partie perpendiculaire du T pour le guider. L'appareil est mu par deux turbines à gaz qui actionnent une hélice. L'un des problèmes de cet appareil est le bruit, mais celui-ci peut être réduit par l'utilisation d'un moteur à induction linéaire, actuellement en voie de réalisation dans plusieurs pays.

On ne semble pas prévoir actuellement d'applications pratiques pour l'aérotrain et dernièrement la Grande-Bretagne a annulé le développement de l'appareil de Tracked Hovercraft Ltd. En plus des problèmes de l'environnement, l'efficacité inhérente de la suspension à coussin d'air semble être inférieure à celle de la sustentation magnétique.

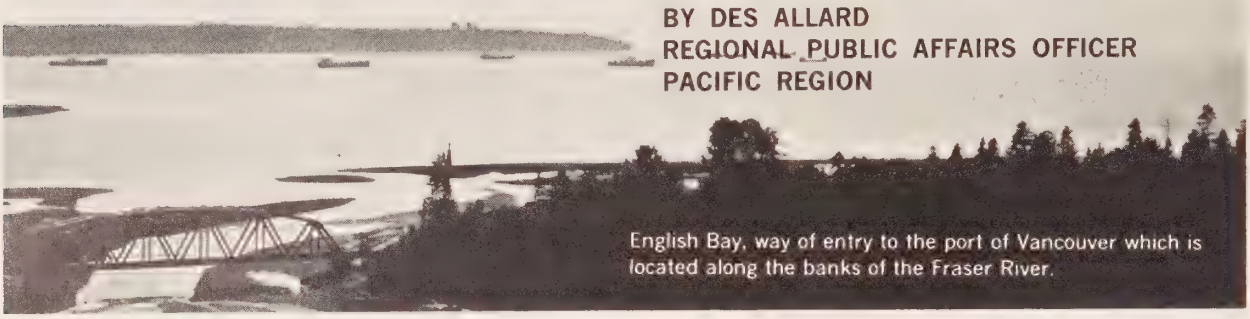
Les derniers développements des systèmes de sustentation magnétiques semblent indiquer que ceux-ci pourraient être utilisés vers le milieu des années 80. La version basse vitesse actuellement à l'étude par la "Ontario Transportation Development Corporation" fournira des renseignements et une expérience intéressante sur cette nouvelle technique, et permettra d'évaluer ses possibilités dans les conditions climatiques canadiennes.

Enfin, je vous laisse une dernière pensée. Les possibilités et les problèmes engendrés par les nouvelles techniques du transport en surface guidé soulignent le besoin d'une accélération des recherches techniques, économiques et sociales. Sans doute, la recherche scientifique et technique est-elle fondamentale de par la nature même du réseau de transport, et les nouveaux réseaux nécessiteront sans doute une accélération des recherches de ce genre sur leurs aspects pratiques et théoriques; mais les succès techniques ne sont pas le seul critère, les effets économiques, sociaux et politiques de ces progrès étant tout aussi importants que leur réalisation.

Je crois que la solution à nos difficultés en ce qui concerne les réseaux de transport en surface guidé, dont plusieurs sont particulières à l'environnement canadien, doit être trouvée ici même au Canada. C'est pourquoi l'un des besoins essentiels du développement des transports au Canada est une recherche intensifiée, intégrée et interdisciplinaire, sans oublier la nécessité de personnel qualifié.

PORT OF VANCOUVER

BY DES ALLARD
REGIONAL PUBLIC AFFAIRS OFFICER
PACIFIC REGION



English Bay, way of entry to the port of Vancouver which is located along the banks of the Fraser River.

"Ports are major enterprises which generate an enormous ripple effect on the surrounding communities". Fred Spoke, Manager of the Port of Vancouver.

Current port construction, vigorous new marketing programs and rising standards of living in the Pacific rim countries are certain to greatly accelerate the Port of Vancouver's ripple effect far beyond its Rocky Mountains background over the next decade.

Port authorities are through hiding lights under bushels. The business community locally and abroad will know that Vancouver, which last year handled some 42 million tons of cargo, is Canada's biggest port by far. And, it's going to become much larger.

There is physical evidence of this right now. The 76-acre Vanterm ultra modern container terminal is under construction on the south shore. This Burrard Inlet operation will have three berths. Two will be 900 feet long with 50-foot low tide depths to accommodate 50,000 ton container ships. These are currently the world's largest. The third berth will be for barge loading and roll-on, roll-off operations. It will have two 40-ton cranes and 76 acres of back-up space, more than enough to store 10,000 containers.

On the north shore, an 86-acre general cargo terminal, with future container capabilities, called Lynnterm, is also under construction. Vanterm should be ready for initial traffic in May. Lynnterm will also be ready in 1975.

Lynnterm is a general cargo complex development which is being built by the National Harbours Board on the North Shore of Burrard Inlet. Anticipated total cost is in excess of $20 million and the terminal is scheduled to be ready for operation in the summer of 1975. Lynnterm provides Vancouver with the potential for all three elements of a modern port facility — adequate bulk handling areas, container facilities and general cargo handling capacity. It will generate a total land area of some 86 acres. The terminal will have three ships' berths, each 800 feet long with a draft of 50 feet at low water.

Initially, the terminal will handle general cargo including forest products and steel, but it will have the capacity for handling containers, if required. Provision will be made at the terminal for public access to the water, nearby, and for viewing the dockside activity.

A feasibility study by the National Harbours Board indicates that the Roberts Bank facility requires "very sizeable" expansion to cope with future structural developments in the port and with expected flows of dry bulk commodities.

Roberts Bank will be engineered in such a way that further dredging can easily be accomplished to accommodate ships of even larger size than 150,000 deadweight tons.

Total capital expenditure of the three projects will be more than $180,000,000.

These funds are not being provided on the basis of sheer guesswork. Late last year, the Canadian Transport Commission did a research study on the outlook for containerization in Canada. The study predicted that the volume of import and export freight moved in containers in Canada will more than double by 1980, while domestic container traffic will grow even faster.

Vancouver is not only getting new basic facilities. Just developing is the new Kap 100 Vancouver vessel traffic management system. This system in effect provides for direct control

over all major traffic in the Strait of Juan de Fuca, right up the Strait of Georgia and into Vancouver Harbour, with respective delineated shipping lanes for all vessels. It will be of immense benefit to shipping in this area, one of the most congested in the world, when considering the mix of pleasure craft with commercial marine traffic.

In addition to all this, an overall long-range planning study is expected to start before too long. This study will evaluate the effects on urbanization, environmental and sociological developments, and measure the impact of the port's activities on the surrounding areas, on the lower mainland, on British Columbia and all the other Western provinces.

As an example of what this type of study will produce, a similar study was conducted recently by the Port of Seattle. It showed that for a single year, the economic impact on King County was approximately $1.1 billion.

In a recent speech to the Vancouver Board of Trade, Mr. Fred Spoke said his organization would soon embark, on a sustained, vigorous marketing program with the prime goals to sell the Port of Vancouver abroad and attract cargoes. "Our hinterland will form part of this marketing effort. And our marketing approach will be closely coordinated with private enterprise", he said.

An advertising campaign as one element of the marketing effort, is in the last stages of implementation, while the first visit of an official port delegation towards several of the Asian Pacific Rim countries was scheduled for late September, Mr. Spoke added. He emphasized that this was only the beginning.

The move toward decentralization, begun a few years ago, and toward "meaningful local input and decision-making", is also well under way, Mr. Spoke said.

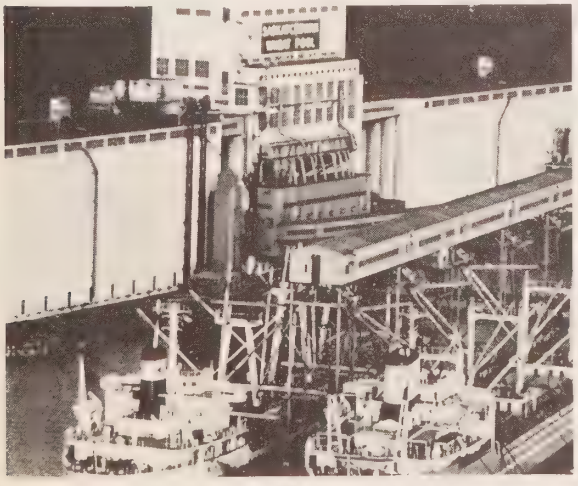
"That major ports in their operations and developments must be oriented through broad national economic policy guidelines is for me an essential basic parameter. Within such broad guidelines, however, in the formulating of which ports and their regions should have an input, ports should be allowed to operate and develop with very considerable latitude".

Vancouver is high on the priority list for required long-range planning for port operations. Since decisions for additional port facilities must be made many years before they are actually required, it is vital that new port development be allowed a considerable degree of flexibility.

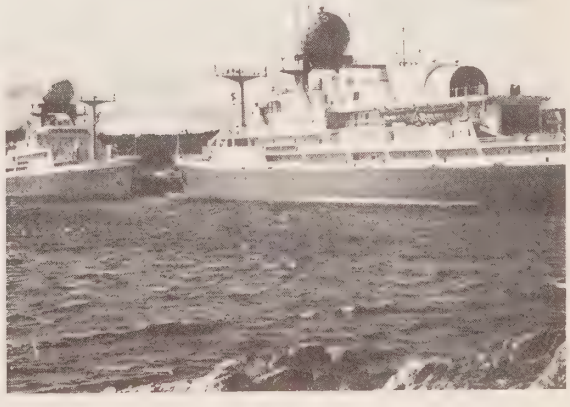
That flexibility is built into Vancouver's port planning now because of the expected technological changes in marine transport and cargo-handling methods which are affecting even now every major port in the world.

Port of Vancouver authorities are unanimous in their predictions that the Port of Vancouver, along with other ports on the North American west coast will expand substanitally because of two major factors: A huge population growth, and a rising in the standard of living in the Pacific rim countries.

A Vancouver grain terminal, where wheat finds its way from the Canadian prairies for trade with countries on the other side of the Pacific.



The CCGS Quadra (right) and CCGS Vancouver. The two weather ships work along the West Coast, reporting meteorological conditions.



LE CENTRE DE BILINGUISME

PAR J.P. PAQUIN

Depuis plusieurs années, des efforts ont été faits au ministère des Transports afin de faciliter l'apprentissage du français. Déjà, lorsque les quartiers généraux étaient installés dans l'édifice Hunter, les employés désireux de parfaire leurs connaissances avaient à leur disposition un mini-centre de rétention. On en était, à ce moment-là, aux débuts de l'enseignement des langues dans la fonction publique. La priorité devait donc être accordée aux cours proprement dits, et à tous les programmes susceptibles d'aider la formation de base.

Les années ont passées. Le bureau des Langues a envoyé des moniteurs assurer à l'intérieur des ministères, le maintien des connaissances acquises en salle de classe. Des centaines de fonctionnaires ont réussi l'examen de connaissance de la langue seconde (E.C.L.), familièrement appelé le "Test de bilinguisme". La roue tourne, et les ministères se retrouvent chaque mois avec quelques dizaines de nouveaux bilingues.

Dans la fonction publique, qu'est-ce qu'un nouveau bilingue? C'est un fonctionnaire qui comprend assez bien le français, qui le parle également d'une façon à peu près convenable et qui a passé avec succès le "Test de bilinguisme". Mais il n'arrive pas à travailler, à penser à son travail en français.

Est-ce la faute des cours de langue? Non! On y enseigne les structures de base, on y pratique la discussion sous forme de table ronde ou panel sur plusieurs sujets d'intérêt général. Mais, lorsqu'une secrétaire a pour voisin un policier, ou qu'un spécialiste du classement des lettres se retrouve auprès d'un contrôleur de la circulation aérienne, il devient quasi impossible de faire participer les étudiants à des travaux directement reliés à leurs fonctions. C'est pourtant, pour eux, la seule façon de s'habituer à penser à leur travail en français et à acquérir le vocabulaire nécessaire à la réalisation d'un bilinguisme fonctionnel.

Le Bureau des Langues joue bien son rôle, qui est d'assurer la formation linguistique de base. Mais c'est dans le milieu même où une langue seconde doit être utilisée que l'apprentissage se fait le mieux. C'est donc dans cette ligne de pensée que le ministère des Transports a décidé de créer un nouveau programme de perfectionnement de la langue seconde.

Devant l'afflux continuel de nouveaux diplômés, le centre de bilinguisme se devait de trouver des solutions nouvelles. Nous n'en sommes plus aux premiers besoins qui étaient de fournir quelques occasions de répéter les éléments acquis. Il s'agit maintenant de faire le pont entre les cours de langue et le langage quotidien du travail. Voilà l'orientation que nous avons décidé de prendre.

Un programme spécial de perfectionnement du français appelé Ateliers de Langue vivante, est offert à tous les employés de l'administration centrale qui ont terminé les cours de français. Pendant six mois, à raison de deux heures par semaine, guidés par des animateurs spécialement choisis et préparés pour ce genre de travail, ils peuvent mettre en pratique leurs connaissances du français dans des conditions recréant le mieux possible leur situation de travail au sein du ministère. A l'occasion d'ateliers, de conférences, d'entrevues, de visites, les étudiants découvrent eux-mêmes le vocabulaire particulier dont ils ont besoin, se corrigent et s'évaluent eux-mêmes à l'aide de la télévision en circuit fermé.

Durant l'année dernière, plus de soixante employés du ministère ont participé à ce programme de perfectionnement. Leur enthousiasme nous a permis de croire que le centre de bilinguisme avait trouvé sa vocation, en répondant ainsi à ce besoin d'assurer un lien entre les cours de langue et le milieu du travail. En effet,

sans une mise en pratique des éléments de langue acquis à l'école, on risquerait de se retrouver d'ici quelques années avec un bilinguisme de papier: des postes identifiés et désignés bilingues, occupés par des employés déclarés bilingues, sur papier, mais ne sachant pas utiliser fonctionnellement leurs nouvelles connaissances.

Pour parvenir à réaliser un climat de bilinguisme fonctionnel, divers services se sont rattachés aux Ateliers de Langue vivante, dont certains placent le ministère des Transports à l'avant-garde dans le domaine du perfectionnement de la langue seconde.

Comme dans plusieurs ministères, des recherches ont été entreprises afin d'accumuler une banque de lexiques techniques et de vocabulaire général. Des ententes ont été faites avec divers organismes spécialisés dans la recherche terminologique qui nous font parvenir régulièrement, au fur et à mesure de leur publication, des lexiques qui sont catalogués et mis à la disposition des étudiants.

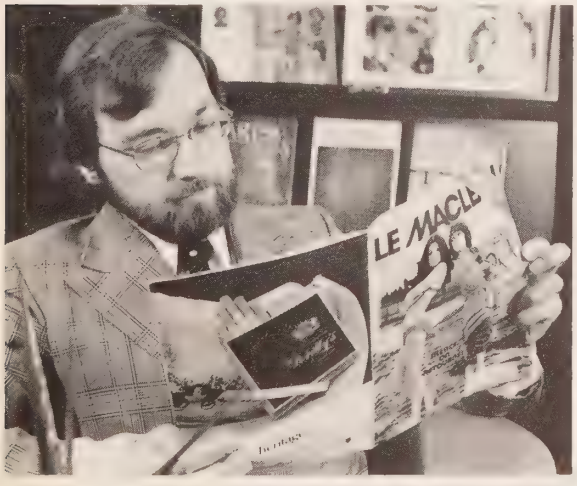
Mais ceci n'est pas suffisant. Qui prend le temps de parcourir un lexique pour essayer de découvrir et d'apprendre de nouveaux termes? Les lexiques sont des outils excellents pour la rédaction d'une lettre ou pour tout autre travail de recherche. Mais dans la conversation de tous les jours, on a besoin de savoir jongler avec les termes les plus usuels. Et pour ce faire, on doit pouvoir entendre et utiliser ces expressions dans un contexte naturel.

A partir des discussions et tables rondes effectuées lors des Ateliers de Langue vivante et à l'aide de spécialistes bilingues du ministère, un choix des termes et expressions courantes, particulières à tel ou tel aspect du transport est fait. Des documents audio-visuels sur télévision en circuit fermé sont ensuite préparés. Ainsi, à mesure que l'éventail de la production s'élargira, les employés désireux de savoir, en français, comment, par exemple, on construit un phare, ou comment on parle de la facilitation aux aéroports, n'auront qu'à insérer une vidéocassette dans un appareil, et écouter, en même temps que les images défilent sur l'écran, tous les termes, toutes les expressions utilisés couramment dans ces domaines particuliers du transport.

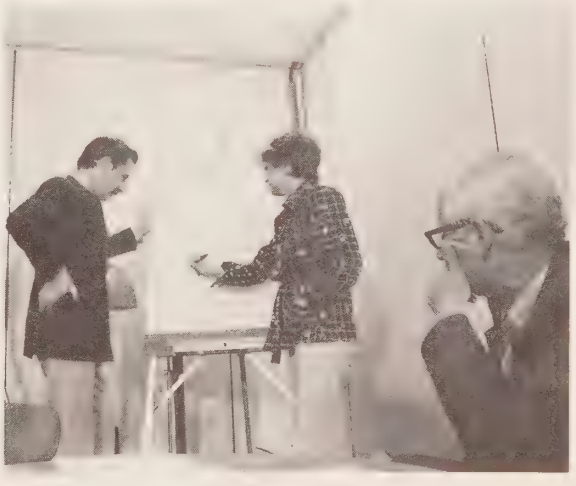
D'autres programmes de perfectionnement de la langue seconde viendront bientôt s'ajouter à ceux déjà existants. On prévoit offrir des cours de rafraîchissement à ceux qui désirent se préparer à l'examen de connaissance de la langue seconde, des cours de correspondance en anglais, et des rencontres culturelles.

Le centre désire répondre aux besoins, au fur et à mesure que ces derniers se font sentir. Il est par conséquent ouvert à toutes demandes ou suggestions qui lui sont communiquées par l'entremise des responsables du bilinguisme.

Quelques minutes de répit permettent de s'attaquer à un magazine de langue française. Le Centre est doté de sa mini-bibliothèque précisément dans ce but.



Les étudiants se rencontrent en petit groupe sous la direction d'un instructeur qui veille au développement de leurs connaissances. Pour une meilleure compréhension, il est de mise de recevoir des éclaircissements-



BILINGUALISM CENTRE

BY J.P. PAQUIN

For several years the Ministry of Transport has been attempting to facilitate the learning of French. Even when headquarters were located in the Hunter Building, employees wishing to perfect their knowledge of a second language had a mini-language retention centre at their disposal. At that time, the teaching of languages in the Public Service was just beginning. Priority therefore had to be given to courses in the strict sense of the word, and to all programs likely to facilitate this basis training.

The years passed, and during this time the Language Bureau sent monitors into the departments to ensure that knowledge acquired in the classroom was maintained. Hundreds of public servants passed the Second Language Knowledge Exam (L.K.E.), better known as the "Bilingualism Test". And so it goes, with the departments gaining a few dozen new bilinguals every month.

This leads to the question of the role that the departments should play, faced with this situation. Just what is a "new bilingual" in the Public Service? He or she is a public servant with a fair understanding of French, who can speak the language to a certain extent and who has successfully passed the "Bilingualism Test". But, he or she is unable to work or think in French.

Are the language courses to blame? Certainly not! The basic structures are taught, conversation is practised through round table or panel discussions on a variety of subjects of general interest. But, when a secretary is seated next to a policeman, or when a letter-filing specialist finds himself next to an air traffic controller, it becomes practically impossible to make all students participate in discussion directly related to their duties. For them, however, this is the only way to become accustomed to thinking of their work in French and to acquire the vocabulary necessary to a functional bilingualism.

The Language Bureau is indeed fulfilling its role, which is to provide basic language training. But a second language is better learned in the milieu where it is to be used. With this in mind, the Ministry of Transport decided to create a new second language training program. Faced with the constant outflow of new graduates, the Bilingual Centre was obliged to find some new solutions. We have passed the stage where it is only necessary to provide a few opportunities for the students to repeat the language elements acquired. We must now find a way to bridge the gap between the language courses and the daily language of work. This is the direction we have decided to take.

A special program for the improvement of French, called "Living Language Workshops", is offered to all employees who have completed French courses. For six months, two hours per week, under the guidance of specially trained and chosen instructors, the students are given the opportunity of putting into practice their knowledge of French under conditions recreating as closely as possible their working situation within the Ministry. During the workshops, conferences, interviews and visits, the students themselves discover the special vocabulary they need and correct and appraise their individual progress with the aid of closed circuit television.

Last year, more than sixty Ministry employees participated in this Language Improvement

Program. Their enthusiasm ensured the success of the program which had been aimed at creating a link between the language courses and the job environment. In fact, if we did not provide the opportunity for putting into practice the elements of language acquired in the classroom, we might possibly find ourselves a few years hence with a "Paper Bilingualism": positions identified and designated as bilingual, filled by employees declared bilingual on paper, but unable to use their new language knowledge on the job.

In order to reach the desired level of functional bilingualism, various services are connected to the Living Language Workshops, some of which place Transport far ahead of other departments in the area of second language training.

As in several other departments, research has been undertaken to accumulate a bank of technical lexicons and general vocabulary. We have arranged for various agencies specialized in terminological research to forward us on a regular basis newly-published lexicons which are then catalogued and put out at students' disposal.

But even this is not enough. Who can take the time to run through a lexicon to find and learn new terms? Lexicons are excellent tools for letter writing or for any other work involving research. But in everyday conversation, we need only to know how to juggle the most common terms. And in order to do so we must be able to hear and re-use these expressions in a natural context.

From the discussions and round tables carried out during the Living Language Workshops and with the help of Ministry bilingual specialists, a choice of terms and current expressions pertinent to various aspects of transport is assembled. Audio-visual documents to be viewed on closed circuit television are then prepared. Thus, as a wide range of topics emerges, employees wishing to know in French how, for example, to build a lighthouse, or the vocabulary for discussing airport facilitation, will only have to insert a video-tape in a machine and listen to all the terms and expressions currently used in these particular fields of transport while the corresponding images appear on the screen.

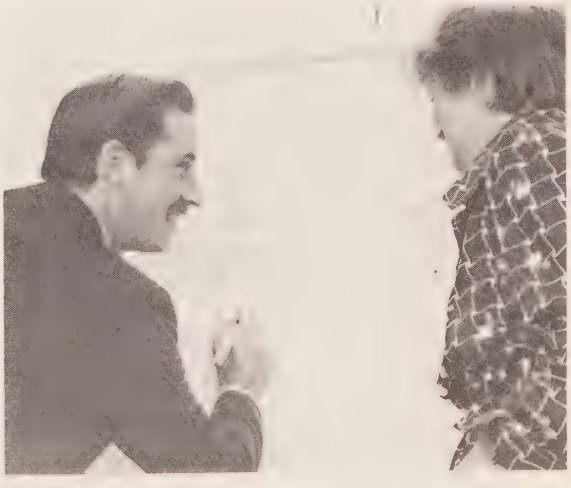
Other second language training programs are soon to be added to those already in existence. We plan to offer refresher courses to persons wishing to prepare for the Second Language Knowledge Exams, correspondence courses in English, as well as cultural get-togethers.

Our Centre wishes to be able to meet the needs as they arise and is consequently open to all requests or suggestions reported to us through bilingualism officers.

A whole new world opens to students who complete their language training. Articles of interest on a great variety of subjects are available in publications at the Centre.



This student has made sufficient progress to play the teacher with his monitor (right). His explanations are proof of his understanding.



L'AÉROBAC

PAR J.L. BIBEAU

Vous avez des tonnes de matériel à transporter, la région est éloignée, le terrain impraticable et les conditions météorologiques impossibles: que faites-vous? Pas question comme on l'aura aisément deviné de recourir aux traditionnelles remorques sur roues, aussi perfectionnées fussent-elles!

Ce vieux problème avait déjà retenu l'attention d'un comité sur la technologie des coussins d'air du Conseil national des recherches qui recommandait même que l'on étudie spécialement l'application de ce principe pour des véhicules tout terrain. Le Centre de développement des transports, membre de ce comité, y voit là un mode de transport à étudier. Pour sa part, l'Hydro-Québec qui doit exécuter des travaux dans des régions où le transport n'est possible seulement que durant certaines périodes de l'année, serait fort heureuse de pouvoir utiliser un moyen de transport sur coussin d'air qui se moquerait des mauvais terrains.

Et c'est ainsi que l'Hydro-Québec et le Centre de développement des transports décident à l'hiver 1972-73 de mener une étude conjointe sur les remorques à coussin d'air qu'on baptisera "aérobac". Chacun prendra sa part de responsabilité financière: le Centre devra entre autres louer les aérobacs et l'Hydro-Québec fournir les véhicules de remorquage et le personnel nécessaires. L'important, c'est la jupe...

L'aérobac, c'est quoi exactement? Il s'agit avant tout d'une remorque dont les roues auraient été remplacées par un coussin d'air i.e. que la charge serait supportée par une pression créée par la présence sous elle d'un fort débit d'air. Quant à l'application de ce principe, il se traduit par la présence d'une jupe sous la structure qui gardera entre elle et le sol un air devenu prisonnier qui se trouve à former ainsi un coussin d'air.

Cette jupe, elle peut emprunter différentes formes. C'est ainsi que pour l'aérobac Terracross utilisant le système HDL (Hovercraft Development Limited), le coussin d'air est délimité par une série de godets triangulaires juxtaposés à la périphérie de la remorque. Pour sa part, l'aérobac Hoverjack recourt au système Bertin qui se distingue par la disposition multicellulaire du coussin, chaque cellule étant composée d'une jupe circulaire recevant une partie du débit total.

On y va!

Mai 1973, nous sommes à Ragueneau, à l'ouest de Rivière-aux-Outardes près de Baie-Comeau, où l'Hydro-Québec construit certaines lignes de transmission. La qualité du terrain et la topographie sont fort variées. On y retrouve de tout: roc, argile, tourbe parfois épaisse, marécages et sable. La pluie transforme en véritable bourbier le terrain où la veille, le moindre courant d'air aurait soulevé un épais nuage de poussières. Vraiment, un laboratoire idéal pour mettre à l'essai deux aérobacs!

Reste maintenant à trouver les véhicules de remorquage. Sans eux, rien ne bouge évidemment. D'autre part, l'aérobac étant dépendant de lui, il ne pourra circuler seulement qu'aux endroits où le véhicle de remorquage pourra le faire. Par conséquent, le véhicule qui alliera puissance et légèreté, deviendra un excellent instrument de remorquage. Des six mis à la disposition du groupe au cours des essais, le prototype GT-260 de Bombardier s'avéra le plus intéressant (A vide, sa pression sur le sol n'est que de 1.5 livre au pouce carré).

On décolle!

Les lourdes charges qui atteindront douze tonnes pour certains essais, sont mises à bord des aérobacs. Les moteurs-ventilateurs tournent. Les aérobacs s'élèvent. C'est le moment d'aller de l'avant.

Les difficultés, certaines mineures, surviennent rapidement. Les souches et les billes de bois, entre autres, endommagent plus d'une fois les jupes de nos remorques. Certaines surfaces, spécialement les endroits où les bleuets abondent, rendent difficile la formation du coussin d'air requis. Le contrôle latéral des aérobacs est parfois déficient à un point tel qu'on doit apporter certaines modifications. L'air soufflé provoque fréquemment des nuages de poussière ou de particules boueuses qui rendent la visibilité mauvaise, les opérations dangereuses, la vie du personnel pénible et la mécanique grincheuse. Les barres d'attache ne résistent pas toujours aux

violents soubresauts qui se produisent. Et surtout les pannes se produisant souvent dans les pires endroits, l'entretien des aérobacs a exigé beaucoup de débrouillardise et d'esprit d'initiative de la part des responsables du bon fonctionnement de ces véhicules.

Devant tous ces ennuis et ceux passés ici sous silence, on serait tenté à prime abord de conclure que l'avenir des aérobacs n'est pas rose. Ceci, il ne le faudrait surtout pas, car, souligne-t-on au Centre, les aérobacs mis à l'essai étaient des prototypes qui peuvent être perfectionnés à la suite des observations faites du travail de ces deux véhicules. D'ailleurs, les spécialistes qui voulaient par cette recherche étudier une remorque susceptible d'améliorer les transports dans le Nord canadien, mettent beaucoup d'espoir dans l'aérobac.

Quant aux recommandations formulées à la suite de cette expérience, on en retiendra spécialement quatre:

1 le véhicule de remorquage forme un tout avec l'aérobac: il doit donc être choisi en fonction du travail à accomplir;

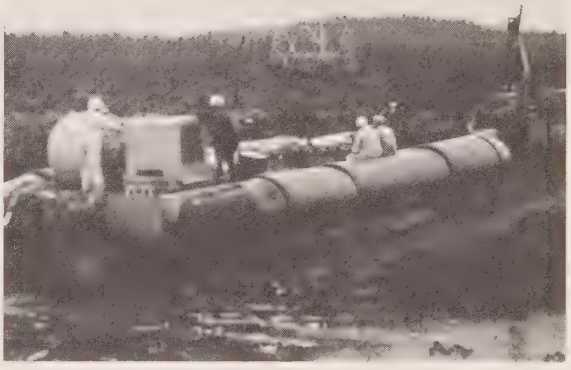
2 pour des raisons pratiques, l'aérobac doit devenir un véhicule hybride, possédant des roues utilisables au besoin, ce qui lui permettra de circuler sans le coussin d'air sur les sols poussiéreux, ou occasionnellement, sur les routes publiques;

3 les constructeurs des aérobacs doivent penser davantage au confort du personnel et mieux prévoir la façon d'entretenir et de réparer leurs véhicules;

4 finalement, les opérations de transport doivent être projetées de façon à profiter au maximum de l'avantage primordial de l'aérobac: sa vitesse sur les sols à faible soutien.

Au fond, à vrai dire, le principal "handicap" de l'aérobac est son absence d'autonomie qui limite ses déplacements à ceux du véhicule de remorquage. Et pourquoi pas un véhicule complètement autonome, se prend-on à rêver? Ne s'agit-il pas en somme d'y adapter un mode de traction adéquat tel que pneus à basse pression ou chenilles? C'est sans soute là un autre sujet de recherche pour le Centre de développement des transports.

Le Terracross semble aussi heureux qu'un poisson dans l'eau.



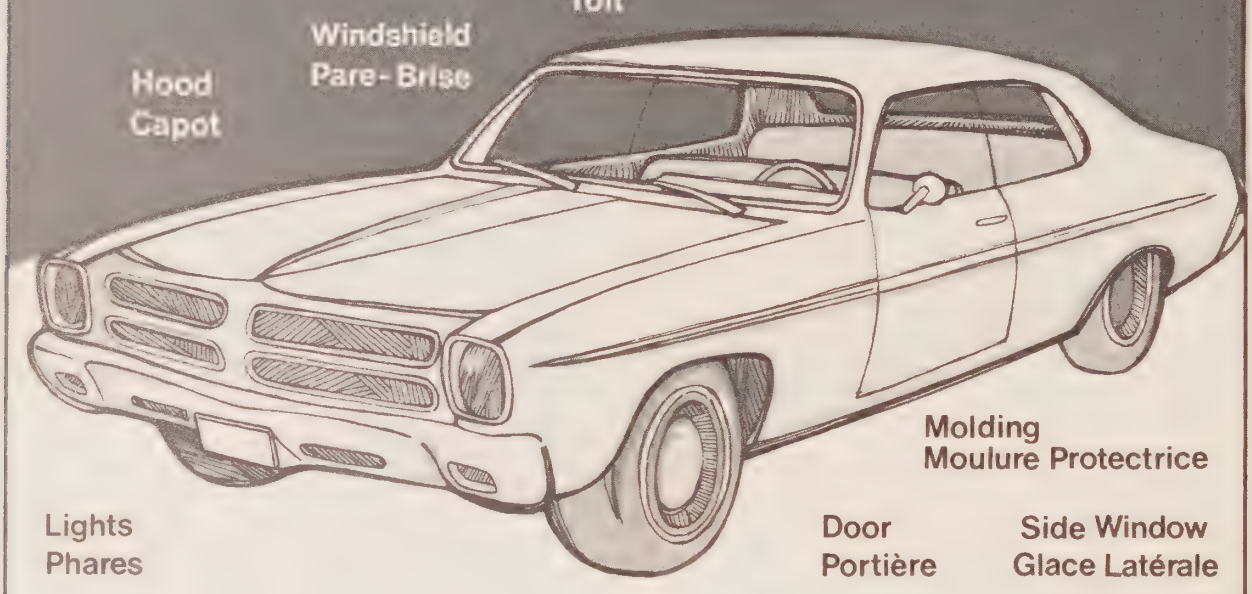
Une pente! Pas de problème pour le Hoverjack...

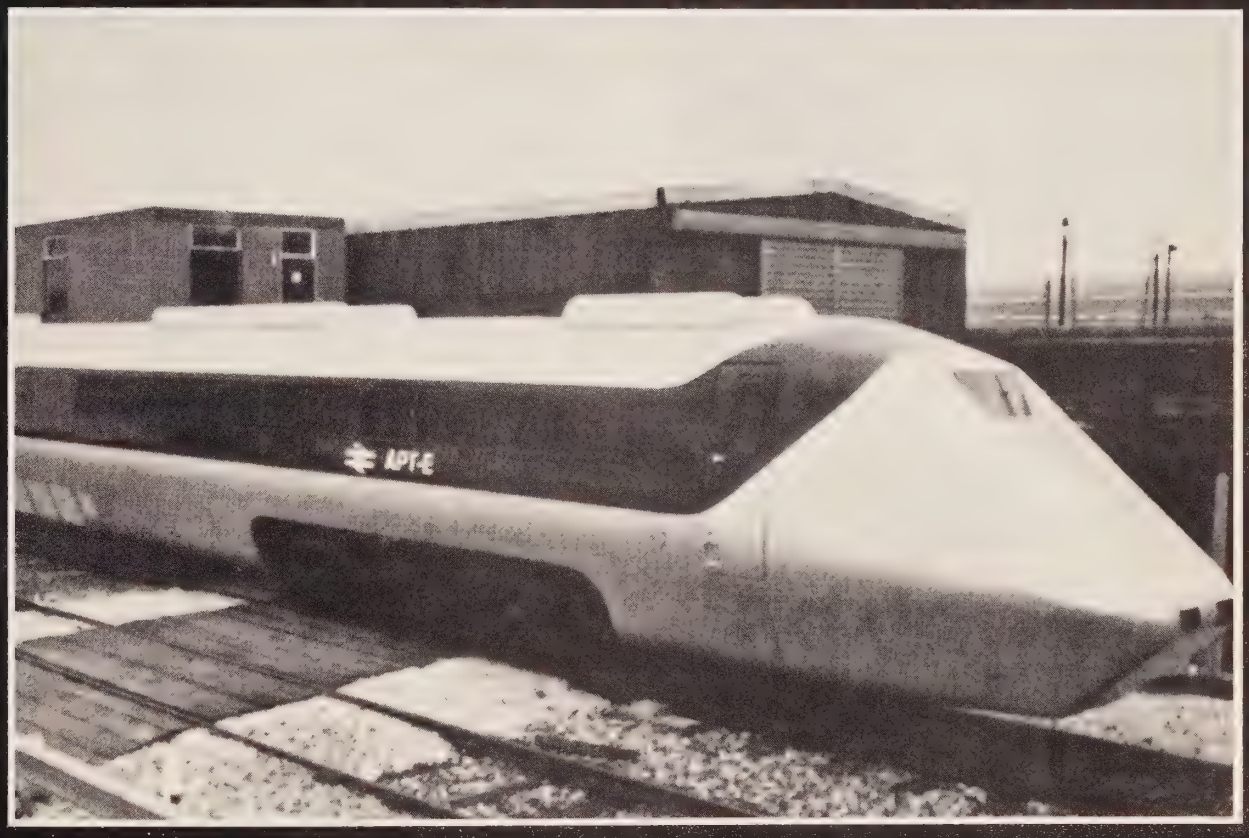


Une remorque traditionnelle qui serait sans doute heureuse d'avoir un coussin d'air sous elle.



POUR VOUS AND ME





Passenger Advance Train. British rail development that will travel at 240 km. ph (150 MPH) in very heavy density corridors by the 1980's.

Conçu pour le transport par rail des années 80,ce modèle britannique qui voyage à 240km à l'heure (150 milles à l'heure) devrait être utile sur les lignes où la circulation est particulièrement dense.

RETIREMENTS/RETRAITES



Guy Philpott, Technical Administrator, Engineering Services, Telecom. & Electronics Branch, Central Regional Office, has retired after 35 years of service.

D.A. Lane, Administrator, Central Region, is shown presenting a 35-year certificate to Mr. Philpott at a retirement party in his honour.

M. Guy Philpott, administrateur technique, Services techniques, division des Télécommunications et de l'électronique du bureau régional du centre, prend sa retraite après 35 ans de service à la Fonction publique. M. D.A. Lane, administrateur de la région centrale, présente à M. Philpott un certificat soulignant cet événement.



Ann Marie Collin smiles as S.W. Wellman, Director of Finance and Administration for the Surface Administration reads from a special scroll prepared to mark Miss Collin's retirement after 34 years in the public service.

Mlle Ann Marie Collin était toute souriante lors de la réception tenue pour souligner ses 34 années de service à la Fonction publique. M. S.W. Wellman, directeur des Finances et de l'Administration, lit une adresse la remerciant de sa longue collaboration.

Charles A. Brint, former Personnel Officer, Staff Relations Division, CATA, was guest of honour at a reception on the occasion of his retirement. He joined the Ministry in 1949 and since 1958 has served in MOT's Air Administration.

M. Charles A. Brint, du bureau du personnel, division des Relations de travail de l'ACTA a été l'invité d'honneur lors d'une réception tenue à l'occasion de sa retraite. Venu au ministère en 1949, M. Brint depuis 1958 était employé à Ottawa par l'Administration de l'Air du ministère.

SUGGESTION AWARDS

John Wayne Murray	Amalia, Ontario	$ 50.00
Robert S. Ames	Winnipeg, Manitoba	$ 50.00
Lorne Edward Salway	Ottawa, Ontario	$ 50.00
J.N.C. Cullen	Leduc, Alberta	$ 50.00
Frederick Luettger	Surrey, C.-B.	$ 50.00
Ubald Christin	Frobisher Bay, T. N.-O.	$ 50.00
Ralph A. Kendall	Frobisher Bay, T. N.-O.	$ 50.00
A.W. Franson	Alert Bay, C.-B.	$ 60.00
Milne Norman	Winnipeg, Manitoba	$ 65.00
Page Richard	Port Hardy, C.-B.	$ 75.00
Daniel Mahoney	Havre Boucher, N.-E.	$ 75.00
Phillips Pawlivski	Grande Prairie, Alberta	$ 75.00
Frederick McDonald	Shubenacadie, N.-E.	$ 90.00
George A. Kuxhaus	Saskatoon, Saskatchewan	$100.00
William J. Mansfield	Dartmouth, N.-E.	$100.00
John McInnes	Vancouver, C.-B.	$100.00
Kenneth C. Blair	London, Ontario	$100.00
André J. Tardif	Timmins	$100.00
Georges E. Aubut	Montréal, Québec	$105.00
Harry M. Compton	Ottawa, Ontario	$125.00
Constance MacDonald	Ottawa, Ontario	$125.00
William Homenuik	Winnipeg, Manitoba	$135.00
Darcy R. Wheeler	Calgary, Alberta	$150.00
Frank B. Hartlen	Shubenacadie, N.-E.	$150.00

SUGGESTION AWARDS/PRIMES À L'INITIATIVE

Beatrice G. Bottema and Leroy Ward received a joint supplementary award of $520 to add to their previous award of $200 resulting from savings made in the improvement of billing procedures for telecommunications services to air carriers flying the trans-oceanic routes.

D.H. Baylis of Victoria, B.C., received an incentive award of $1000 for his suggestion that has resulted in improvements to radar equipment of the CCGS Quadra and CCGS Vancouver. The suggestion will permit annual reduction in maintenance cost of almost $100,000.

Charles Turrence of Richmond B.C. received an award of $300 for suggesting the use of fibreglass non-skid markers on seaplane floats.

Leo George Branch of Ottawa received an award of $300 for his suggestion that the Telecommunication Laboratory need not be used for daily pick-up of supplies.

M. Charles Turrence de Richmond (Colombie Britannique) s'est vu remettre la somme de $300.00 pour avoir suggéré l'emploi de plaques d'identification de fibres de verre sur les flotteurs des hydravions du ministère.

M. Léo George Branch d'Ottawa s'est vu remettre la somme de $300.00 pour avoir suggéré que les camions du laboratoire de Télécommunication ne soient pas utilisés quotidiennement pour le transport des approvisionnements.

Mlle Béatrice G. Bottema d'Edmonton et M. Leroy Ward d'Ottawa, ont reçu un supplément de $520.00 à une prime de $200.00 qu'ils s'étaient déjà méritée pour avoir suggéré des améliorations au service des comptes de la division des télécommunications, qui assurer le service aux appareils voyageant sur les routes aériennes trans-atlantiques.

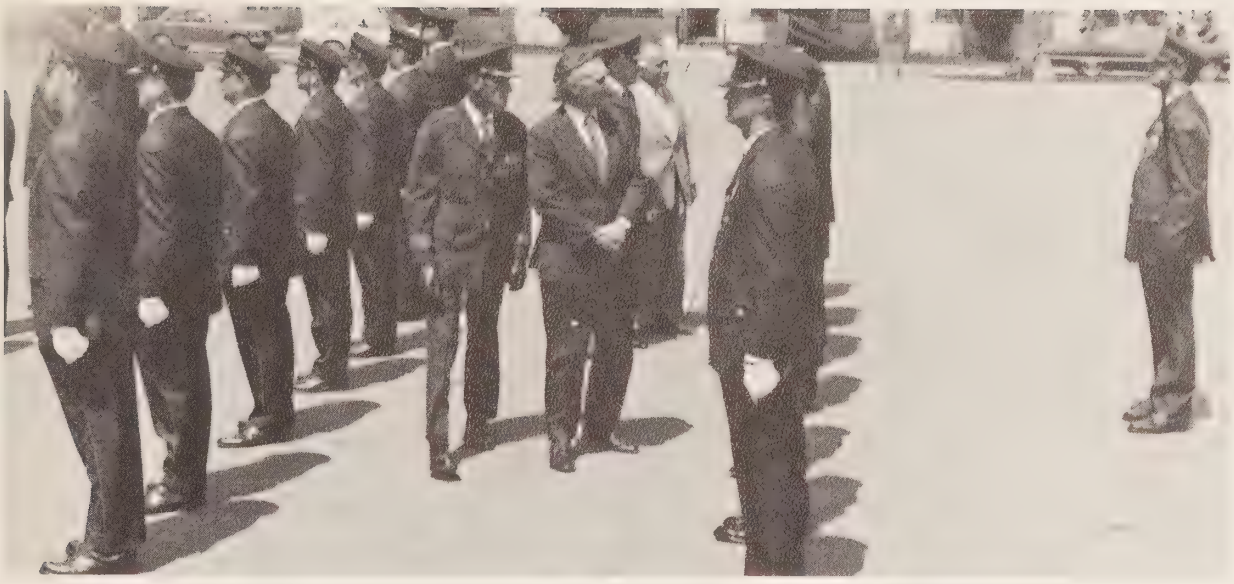
M. D. H. Baylis de Victoria (Colombie-Britannique), s'est mérité une prime à l'initiative de $1,000 suite à une suggestion qu'il a fait concernant l'équipement radar des NGCC Quadra et Vancouver. Cette suggestion a comme résultat de permettre une réduction de l'ordre de $100,000 des coûts d'entretien annuels.

W.H. Huck (right), Administrator, Canadian Air Transportation Administration, stands before a giant truck used to haul oil-laden sand from the open pit mining site to the processing plant at the Great Canadian Oil Sands operation near Fort McMurray in northeastern Alberta. With him is Don Dewar, Western Regional Administrator, CATA. Mr. Huck and senior members of Western Region staff spent a week visiting sites throughout the MacKenzie River Valley system in Canada's North. Highlight of the orientation was a visit to Tuktoyaktuk on the Arctic Ocean and an off-shore rig drilling for oil. The trip gave administrators an insight into the effect of present and future resource development on Ministry sites throughout the area.

L'Administrateur du transport aérien, M. W.H. Huck (à droite) devant les camions géants utilisés pour le transport des sables bitumineux jusqu'aux usines de transformation de la Great Canadian Oil Sands près de Fort McMurray dans le nord-est albertain.

Lors de sa visite des emplacements du bassin du fleuve Mackenzie dans le Nord du Canada, M. Huck était accompagné de M. Don Dewar, administrateur de la région de l'Ouest pour l'ACTA. Les principales étapes du voyage ont été Tuktoyaktuk sur l'océan Arctique et les installations en mer pour l'extraction du pétrole.





National Harbours Board Police Graduates are seen on inspection following the first national recruit training course. Left to right, are Inspector E.L. Martin of the NHB Police; Roy Illing, Administrator, Marine Transportation Administration; D.N. Cassidy, Director Police and Security, National Harbours Board; Guy Beaudet, Vice Chairman and member of the Saint Lawrence Region, National Harbours Board.

Des policiers du corps de police du Conseil des Ports nationaux sont passés en revue suite à une première session nationale d'entraînement. De gauche à droite nous pouvons remarquer l'inspecteur E.L. Martin du corps policier du Conseil des ports nationaux; M. Roy Illing, administrateur à l'administration de la marine, M. D.M. Cassidy, directeur de la police et de la sécurité au Conseil des Ports nationaux, et M. Guy Beaudet, vice-président et membre de la région du Saint-Laurent du Conseil des Ports nationaux.

Representatives from the Inter-governmental Maritime Consultative Organization (IMCO) met in Ottawa in July. They reviewed draft articles and annexes of a proposed convention on maritime search and rescue, as well as preparatory work for an international conference to be held in London in 1978.

Des représentants de l'Organisation intergouvernementale consultative de la navigation maritime (OMCI) se sont rencontrés à Ottawa du 8 au 12 juillet. Ils ont étudié des projets d'articles et d'annexes pour une convention sur les recherches et le sauvetage maritimes, et passé en revue les travaux préparatoires à une conférence internationale qui doit se dérouler à Londres en 1978.



On our cover is the Light-Rapid-Comfortable (LRC) train, which is being tested and evaluated. This new generation, high-speed passenger train is Canadian designed for low-cost operation over existing tracks.

En page couverture le train LRC (Léger, Rapide, Comfortable). Ce prototype de conception canadienne est actuellement étudié à titre expérimental. Cette nouvelle génération de trains passagers pourra permettre des déplacements rapides à des coûts raisonnables.



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contents/sommaire

Minister's & Deputy Minister's Message 3

Transportation Development in the Canadian North 4

Un noël dans l'arctique 7

An Arctic Christmas 10

Four Hour Rescue 13

Pollution Conference 14

"A quoi est du le délai" 15

"What's The Hold-Up" 18

From Snow to Burning Sand 21

Transcan 25

COVER PHOTO / PHOTO COUVERTURE

Unloading an aircraft at Igloohk on the Melville Peninsula. Photo courtesy of Department of Indian and Northern Affairs.

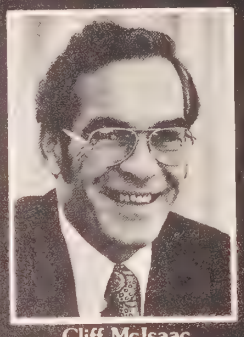
Déchargement d'un aéronef à Igloohk dans la péninsule de Melville. Photographie courtoisie du ministère des Affaires Indiennes et du Nord.

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CHRISTMAS MESSAGE DE NOËL

I cannot express too vigorously my thanks to Ministry of Transport employees for providing me with such strong support in carrying out the complex role of the Government in providing Canadians with such an essential service as Transportation.

As you know, we are on the threshold of some dramatic advances in Canadian transportation, which will require the utmost from all of us, both in planning and implementation, during the coming year.

There is perhaps no more challenging field of activity in Canada than that of transportation. If we approach the issues facing us in that spirit, then we will undoubtedly meet the goals we have set.

I wish you and your families a joyful Christmas season and a happy and prosperous New Year.

Je remercie très sincèrement le personnel du Ministère de leur appui solide à l'accomplissement de mes responsabilités gouvernementales dans le domaine du transport au Canada.

Nous sommes au seuil de changements impressionnants dont la planification et la mise en oeuvre exigeront de nous tous un rendement extraordinaire tout au long de la prochaine année. Je compte sur vous et vous en remercie à l'avance.

Le domaine des transports est le champ d'activités canadiennes qui offre le plus de défis. C'est d'un esprit décidé que nous nous devons d'aborder les problèmes auxquels nous devons faire face. Nous pourrons ainsi nous permettre d'atteindre la réalisation des objectifs élevés que nous nous sommes fixés.

À vous tous et à vos familles, je souhaite un Joyeux Noël et une Bonne Année!



Hon. Jean Marchand

I am pleased, once again, to have the opportunity to send you this Christmas message and convey to you my appreciation for the very high standards you have maintained while carrying out your duties during the past year.

I am proud of the accomplishments of Transport employees from coast to coast, as I see consistently the results of the dedication and enthusiasm with which you carry out your tasks. The high calibre of your work is clearly a major factor in the efficient operation of the Ministry.

While most of you will enjoy the holiday season at home with your families, I know that many others will be carrying out their duties in maintaining essential services. I send to you all my best wishes for this Christmas season and the New Year.

Encore une fois, c'est avec plaisir que je vous transmets ce message de Noël tout en vous remerciant d'avoir atteint un niveau de compétence aussi élevé dans l'exercice de vos fonctions au cours de l'année qui s'achève.

Nous avons toutes les raisons d'être fiers du travail des employés du Ministère des Transports dans tout le pays et l'on peut constater à maintes occasions les résultats de votre dévouement et l'ardeur que vous mettez au travail. C'est sans doute grâce à votre compétence que le Ministère peut fonctionner avec une telle efficacité.

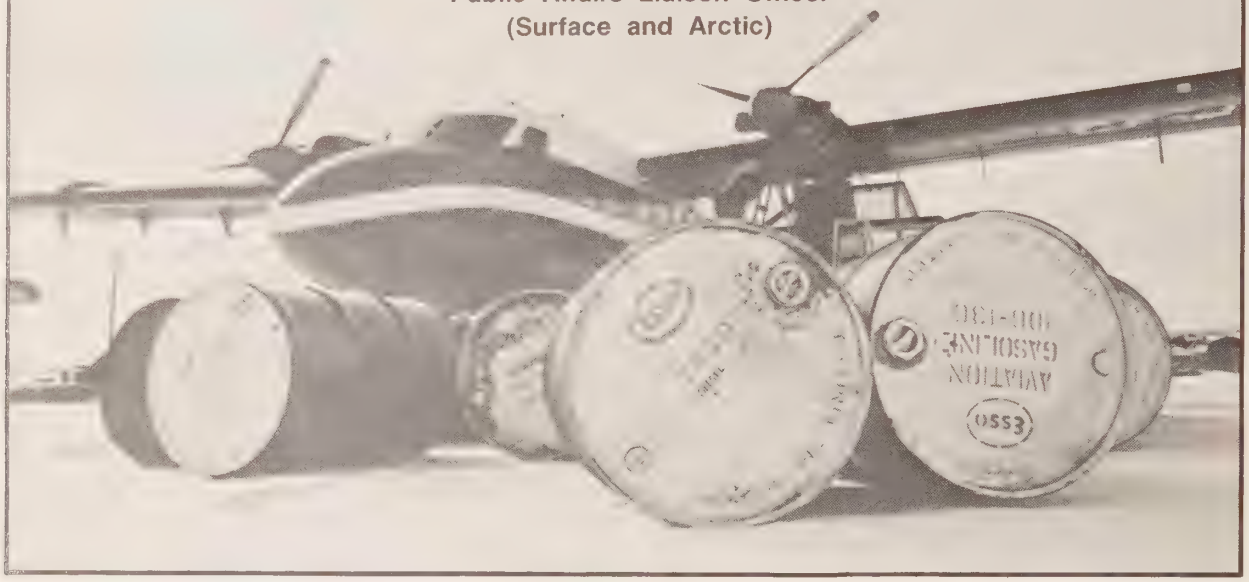
Pendant que la plupart d'entre vous pourrez fêter la Noël en famille, je sais que beaucoup d'autres devront rester à leurs postes pour maintenir les services essentiels. À vous tous, Joyeux Noël et Bonne et Heureuse Année!



O.G. Stoner

Transportation Development in the Canadian North

by Chris Endemann
Public Affairs Liaison Officer
(Surface and Arctic)



The development and settlement of the Canadian North has been severely restricted in the past, not only by the absence of a viable transportation network but also by the severe physical handicaps represented by a harsh climate, rugged terrain, permafrost and a variety of other impediments.

However, these constraints have not militated against the introduction of some vital and historically significant transportation systems. For example, steam vessels plied the Yukon River in the 1860's and the development of the Mackenzie River waterways, started in 1920, was based upon fur trade routes more than a century old.

In addition, a railway was built across the Coast Range and into the Yukon Territory in 1900 and still operates as the White Pass and Yukon Railway – which, incidentally, was the first company to introduce containerization multimodally in Canada – in routine fashion through winter temperatures of –58°F and over sections with 43 feet of snow per annum. Aircraft have been operated successfully throughout the North since 1925.

Yet, there can be no question that some physical problems are serious. A drastically abbreviated shipping season is one major obstacle but, in general, the real problems are economic and common to most frontier areas. Another example is the matter of sheer distance and sparse population in the North. With 56,000 people distributed across 2.4 million square miles, the Northwest Territories and Yukon Territory have population densities of 0.02 and 0.07 persons per square mile respectively.

Nonetheless, phenomenal progress has been made, particularly in recent times, toward developing reliable and efficient transportation modes in the North.

In this regard, the Ministry of Transport's Arctic Transportation Agency was established in 1971 to promote, co-ordinate and control a

multimodal Arctic transportation program.

The Agency has been reviewing present transportation policies and programs for all modes of transport in the North in order to ensure that they are in accord with the national objectives of Northern Canada.

Probably the most effective and highly organized Arctic transport mode is air. The environment offers few problems for the scheduled lines since Canadian operators are accustomed to winter cold and snow. In addition, the advent of turbo-propeller-driven aircraft has greatly facilitated the rapid, safe and efficient movement of air shipments and personnel in the North. Turbo-prop equipment provides most of the advantages of the turbine-engine as compared to the piston-powered aircraft – lower maintenance costs, higher efficiency, increased speed, larger loads and longer ranges. They are exceptionally versatile because of their ability to operate from smaller airports, gravelled runways and improvised ice strips.

The introduction of Boeing 737 jet service between Montreal and Frobisher Bay and a subsequent jet linkage with Resolute Bay by Nordair was a recent milestone in Arctic transportation. Subsequently, Pacific West Airlines has introduced a jet service from Edmonton to Resolute and Inuvik, and Transair a similar connection between Winnipeg and Resolute.

Transport Minister Jean Marchand recently announced a new policy to provide improved air transportation facilities to a large number of communities in the Yukon and Northwest Territories.

Implementation of the policy will be spread over a period of at least five years and will cost over $40-million. The object of the program is to provide minimum standard facilities to improve reliability and regularity of services to northern communities dependent on air transportation for vital travel and supplies. The facilities to be provided will include all those normally found at comparable airports in southern Canada.

This past summer a Federal-Territorial team conducted a survey of air transport requirements in the North. It visited settlements on Baffin Island, in the Western and Central Arctic and the Yukon as part of a comprehensive, consultative process involving communication in four Indian languages and two Inuit dialects. Direct contact was made by questionnaire or site visit with people in over 60 communities. The purpose of this in-depth consultation is to establish northerners' views on the type and quality of air services they feel are required. This approach ensures that people living in the North have a greater opportunity to make their views known and that they will have more say in the way air services develop in the future.

Since the northern seas, including the coastal and interior waters, are frozen and impassable by conventional vessels for as much as eleven months of the year, ocean transport is generally restricted to late July, August, September and early October, depending upon the sector and various environmental considerations.

However, conventional operations during the established season have become reliable. The Canadian Coast Guard icebreaker fleet annually wins praise from Canadian flag operators for its work in spearheading the annual summer sealift of supplies to ports and installations in the Arctic.

There is every reason to look forward to a steadily expanding operation which will enjoy a lengthened Arctic navigation season and promote the development of Canada's remote Arctic regions.

Arctic Shipping Pollution Prevention Regulations have been brought into force to reduce the possibility of marine pollution in Canada's Arctic waters. Shipping is now controlled by limiting the zones in which a vessel may operate, either by prohibition of entry or by entry during prescribed periods. Controls are based upon prevailing ice conditions and the capabilities of the ship.

The Northern Transportation Company Limited (NTCL), a Crown Corporation, has



operated throughout the Mackenzie River system and the Western Arctic coast for over 40 years. Its marine operations have been the principal transportation lifeline serving general community freighting needs and providing logistic support for oil, gas and mineral exploration and development.

Since 1944, the NTCL has transported over four million tons of freight over its 4,800-mile system. As a multimodal operator with – in addition to marine – trucking and air cushion vehicle divisions, it is well equipped to meet the transportation challenges presented by the indicators of potential future growth.

Surface transport systems in the Arctic have been improving steadily and are gradually becoming more viable alternatives to the marine and air modes.

While problems continue to exist, construction continues on the Dempster Highway from the vicinity of Dawson to Inuvik and on the Mackenzie Highway from Fort Simpson to Inuvik. They will facilitate exploitation of petroleum and other natural resource discoveries.

There are three railroads that serve the Canadian Arctic. The Canadian National Railway's Great Slave Lake Line is strategic, particularly for the oil industry, providing a direct link at Hay River with the Mackenzie River barge system. CN also operates a line from Winnipeg to Churchill. This could become important as a staging point for supplies to the Central Arctic.

The British Columbia Railway (BCR) has been actively extending its network into Northern British Columbia. The BCR railhead at Fort Nelson could become an important staging point for shipments from the West Coast ports to the Mackenzie Valley. The BCR is now constructing a line from Fort St. James through Dease Lake to the Yukon border at Lower Post. The Federal Government, participating with the Province in rail developments in Northern B.C., is studying possibilities for extending the continental rail network into the Yukon and the rest of the High Arctic.

The narrow gauge White Pass and Yukon Railway, constructed in "Gold Rush Days," is performing an essential service in moving cargo north from the sea port at Skagway to Whitehorse en route to the Northern Yukon.

Last, but not necessarily least, one comes to the towed sled. The oldest type of Arctic transport cannot be ignored. It is still used extensively; modern technology has developed very satisfactory designs and it remains a rugged and economical means of moving heavy equipment and freight.

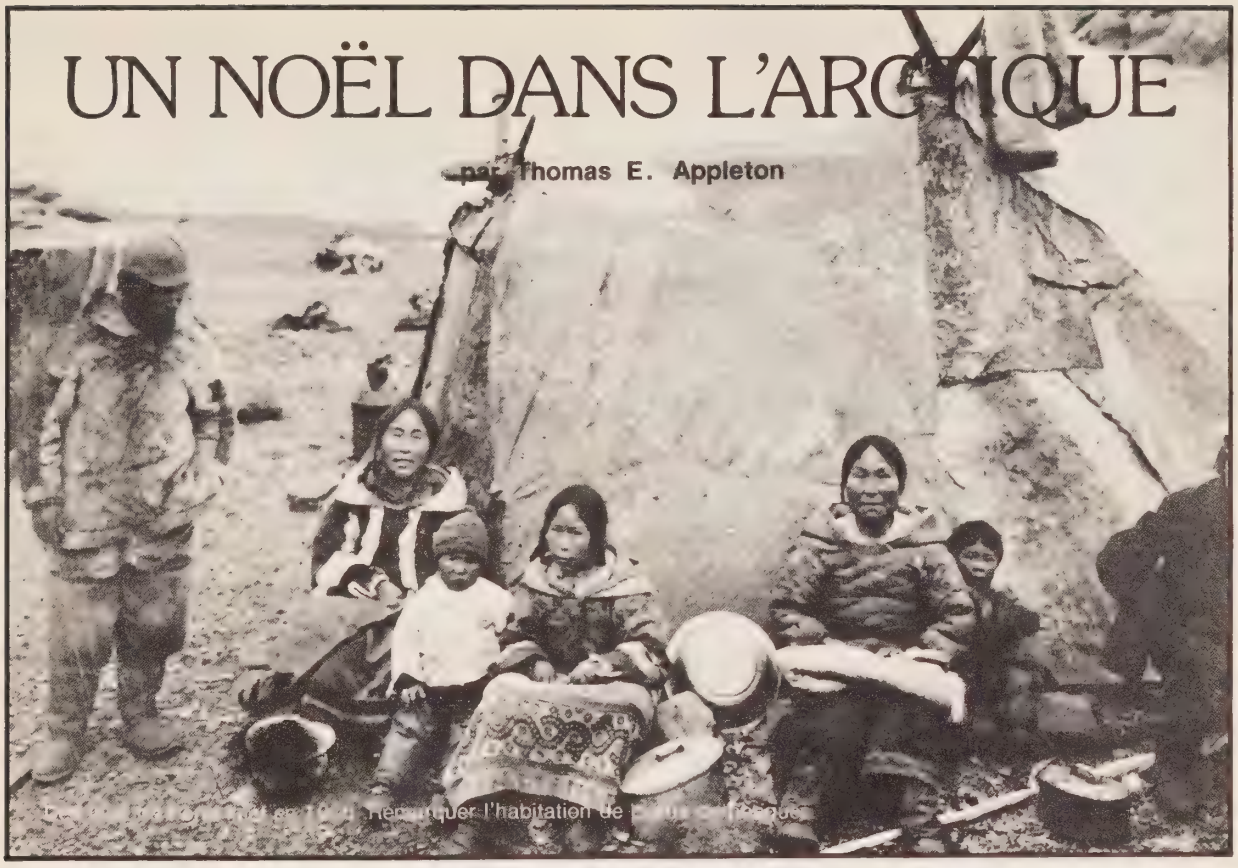
Events of the last 20 years demonstrate that there are no technical limitations upon Arctic transport. The real problem lies in moving materials at costs low enough to allow northern residents a competitive place in the national economy and access to external markets.

Government policies are clearly designed to bridge the gap between the present reality and adequate future measures.

These policies rest on the belief that, while serving essentially one resource at the outset, transportation facilities finally serve an enlarging community while providing the essential base upon which subsidiary systems may build, ultimately providing carrier services comparable to those enjoyed by the country as a whole.

UN NOËL DANS L'ARCTIQUE

par Thomas E. Appleton



À Noël le son joyeux des cloches résonne dans l'air frais et clair des villages et des campagnes. Mais plus souvent qu'autrement, Noël entraine une course effrénée vers les supermarchés surchauffés où le cliquetis des caisses enregistreuses se mêle sans arrêt à des rengaines populaires. Cependant, les Canadiens ne vivent pas tous à la ville ou à la campagne; il y a des régions moins clémentes où la bonne volonté et la charité du temps des Fêtes se manifestent non seulement pour la Noël mais tout au long des luttes quotidiennes pour la survie.

Tel est bien ce qui s'est passé pour fêter la Noël à bord d'un navire, il y a près de 70 ans. L'action se déroule dans l'Arctique au coeur de l'hiver; il s'agit d'une journée inoubliable dans le cadre d'un voyage de quinze mois au cours duquel les marins n'eurent aucune communication directe avec le reste du monde. Elle réunit des marins du sud du Canada, et des hommes, des femmes et des enfants qui, depuis des générations, vivent isolés dans le nord.

Le navire s'appelait *Arctic*. Le Capitaine Joseph-Elzéar Bernier était à la tête d'une expédition ayant pour but d'affirmer la souveraineté canadienne dans tout l'Arctique. Parmi les quarante officiers et membres d'équipage, *l'Arctic* avait à bord un médecin dont les fonctions consistaient entre autres choses à soigner les indigènes, un agent de douanes chargé d'aider le Capitaine Bernier à délivrer des licences aux baleinières étrangères, ainsi qu'un protographe, George Lancefield, dont les clichés confèrent une certaine atmosphère aux dossiers poussiéreux du ministère de la Marine et des Pêcheries.

En septembre 1906, le Capitaine Bernier jetait l'ancre à Port Albert, endroit bien protégé de la Côte Nord de l'île de Baffin. Là, il pouvait s'installer pour l'hiver, près de Lancaster Sound, et attendre le printemps qui lui ouvrirait véritablement les portes de l'Arctique. Port Albert, petit détroit situé entre l'île de Baffin et une autre petite île, est entouré de rochers obscurs et nus qui s'élèvent par endroits à près



L'Arctic à ses quartiers d'hiver de Port Albert.

de 3,000 pieds. Peu d'Esquimaux y vivent, même de nos jours, et au moment de la visite du Capitaine Bernier, l'unique habitation, sauf quelques tentes en peaux de phoques, était une cabane de bois servant de station baleinière où le Capitaine Mutch de Dundee s'occupait occasionnellement des affaires du seul autre visiteur, une baleinière écossaise.

L'arrivée du navire de l'État fut un événement notable pour tout le district de Pond Inlet. Certains Esquimaux parcoururent vingt ou trente milles par jour en traîneau à chiens pour venir rencontrer le Capitaine Bernier; ils réussirent à établir de très bons rapports entre eux. Il y avait déjà trois Esquimaux parmi l'équipage, en vue surtout d'entraîner les chiens et de chasser le phoque nécessaire pour se nourrir et se protéger contre le scorbut. L'un des trois, du nom de Kanaka, fut nommé interprète officiel de l'expédition.

Mais c'était déjà novembre et il commençait à faire froid; tout le monde travaillait avec ardeur aux divers préparatifs de l'hiver. Le navire fut remblayé, la neige servant d'isolant; de la nourriture et des vêtements furent placés dans des igloos au cas où il y aurait un incendie à bord de *l'Arctic;* le menuisier couvrit le pont supérieur d'un abri en bois. Les mécaniciens fermèrent les chaudières, la cheminée fut rabattue et tous s'installèrent dans une routine où les lampes à l'huile et les poêles – alimentés en grande partie de morceaux de charbon provenant des cendres de la chambre des chaudières – offraient à peine suffisamment de lumière et de chaleur en la traînante obscurité des journées de l'Arctique.

Bernier était un bon chef. De temps à autre, il organisait des fêtes pour tromper la monotonie: des compétitions sportives et de tir à la carabine permettant de gagner de petits prix, un dîner à l'occasion de l'anniversaire du Roi Edward VII et une fête en l'honneur de l'anniversaire d'un particulier; toujours, la communauté esquimaude y prenait part. À l'approche de Noël, le Capitaine Bernier avait décidé de souligner l'occasion de façon traditionnelle la plus pure. Kanaka fut envoyé à terre et chargé d'inviter toutes les familles esquimaudes à passer le jour de Noël à bord; on pria le Capitaine Mutch de se joindre au groupe. Le Capitaine Bernier avait demandé au chef steward de préparer un bon dîner canadien pour cent personnes. Mais il avait sous-estimé le nombre des convives et l'on se souviendra longtemps de ce Noël 1906.

Cette année-là, Noël tombait un dimanche. Au cours de la matinée, tandis que le Capitaine assistait à l'Office divin comme à l'accoutumée, les premiers visiteurs se joignirent aux prières de la plupart des officiers et membres d'équipage. Habitués à la vie de chasseur nomade, les Esquimaux se sentaient tout autant chez-eux à Port Albert que n'importe où ailleurs. Mais chacun des hommes de *l'Arctic* devait se revoir en pensée chez lui, dans son coin du Canada, et la prière bien connue "Puissions-nous retourner en toute sécurité pour profiter des bienfaits de la terre et des fruits de notre labeur" dut avoir sur eux un effet bien sensible.

L'Arctic était un petit navire. Sous les ponts, il y avait peu d'espace, tous les coins étant remplis de matériel quelconque, les hommes n'avaient pour se retirer que leurs couchettes tassées les unes près des autres. Mais le navire était tout propre, il y avait des photos de famille et des décorations venant d'on ne sait où, le bruit des bottes des marins et des mukluks sur les ponts et les échelles était accompagné du bavardage des visiteurs et de l'équipage échangeant des voeux. À une heure, cent vingt Esquimaux étaient arrivés. Il aurait été

impossible de faire asseoir le quart de ces gens dans les petites salles de *l'Arctic* et la réunion eut lieu dans la maison d'hiver sur le pont. On ne sait pas ce qui était au menu. Le cuisinier du navire se serait vu dans l'impossibilité de préparer le genre de choses qui se trouvent aujourd'hui à bord des brise-glaces de la Garde côtière canadienne; il y avait probablement de la viande de phoque, un met qu'ont sûrement préféré de beaucoup la plupart des invités. Plus tard, on servit du thé et du café bien fort, noir comme la nuit de l'Arctique et, pour les enfants, du caramel fait à la cuisine.

La réunion bat son plein. Le Capitaine Bernier s'adresse à tous en tant que Canadiens; puis des membres de l'équipage vont chercher ce qui faisait l'orgueil du navire, le piano mécanique et le phonographe. S'ensuivent chansons, jongleries, prouesses acrobatiques et luttes. Bientôt tout le monde se met à danser au son discordant de la musique. La faible lumière des lanternes du pont vascille sur les drapeaux décorant les murs sombres pendant que chacun tape du pied et qu'hommes, femmes et enfants entonnent des chansons. A minuit, c'est au milieu de la bonne humeur, que les visiteurs quittent le navire pour rentrer chez-eux.

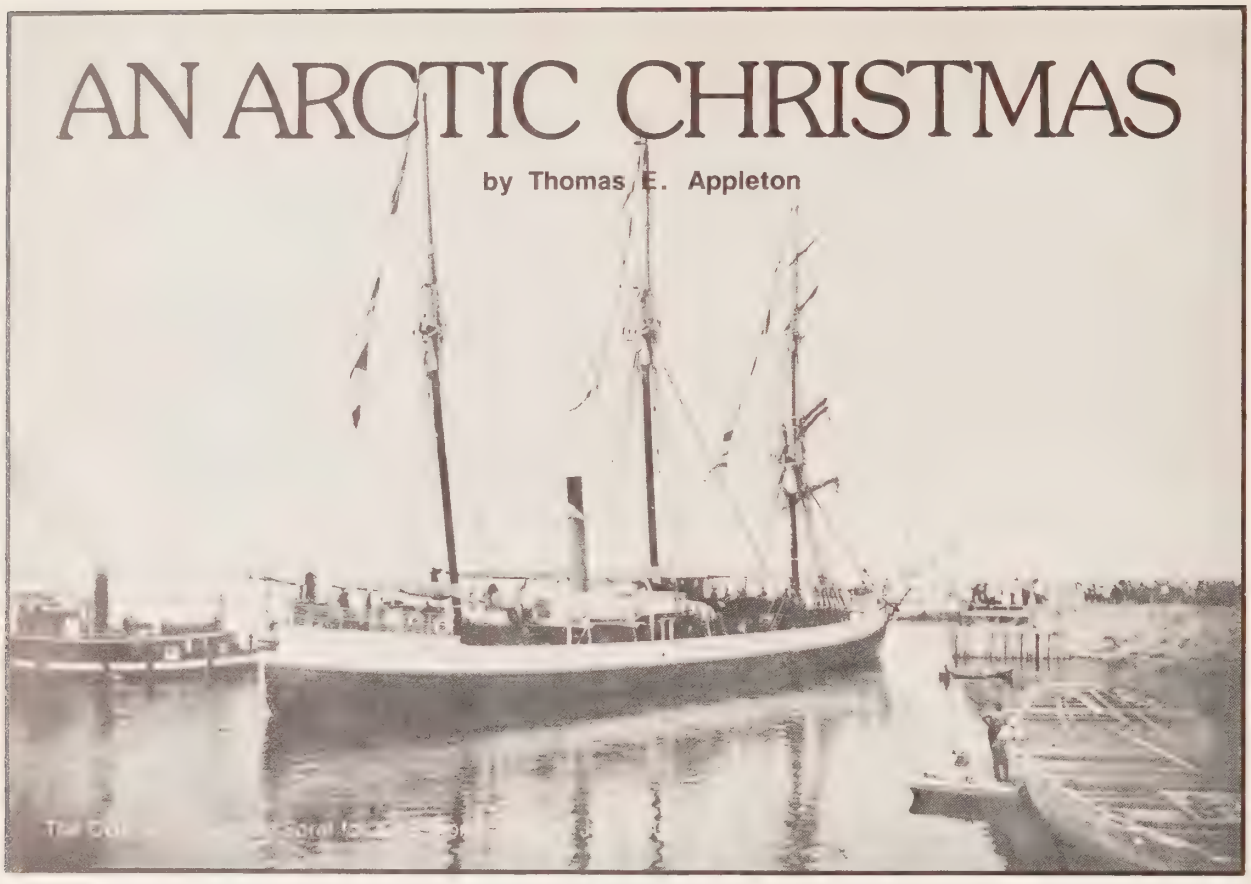
Ce fut un magnifique jour de Noël, un jour empreint de charité, un jour de mystère et d'émerveillement, le jour des enfants. Dans le silence du long hiver arctique, les hommes avaient le temps de penser à tout cela.

Le Capitaine Bernier (dans l'escalier à droite) en compagnie de ses officiers et des missionnaires moraves à Port Burwell, le 8 septembre 1907. On peut remarquer le Docteur Pépin dans la deuxième rangée (le troisième à gauche).



AN ARCTIC CHRISTMAS

by Thomas E. Appleton



There are many moods to Christmas. One aspect is ushered in by the joyful sound of church bells in the clear and frosty air of country villages. More often than not, Christmas follows a frantic rush in stuffy supermarkets where the jangle of cash registers is at least an honest noise in the never-ending jingle of canned carols. But not all Canadians live in town or country – there are harsher regions than either, where the spirit of goodwill is a self-evident proposition, not only for Christmas, but for the stark necessities of everyday survival.

Of such is this true story of Christmas in a ship, nearly 70 years ago. It is set in the grip of the Arctic winter, a memorable day in a voyage of 15 months with no direct communication with the outside world. It brought together seamen from the southern part of Canada with men, women and children who, for countless generations, had lived in isolation on its northern fringe.

The ship was the CGS *Arctic*. The captain was Joseph-Elzear Bernier, leader of an expedition to show the flag as a sign of Canadian sovereignty throughout the entire Arctic archipeligo. Among 40 officers and crew, the *Arctic* carried a medical officer whose duties included service to the people living there, a Customs official to assist Bernier in licensing foreign whale-ships, and a photographer – George Lancefield – whose work adds atmosphere to the dusty records of the Department of Marine and Fisheries.

In September 1906 Captain Bernier anchored in Albert Harbour, a favourite pocket on the north coast of Baffin Island. Here he could snug down for the ensuing winter, within easy reach of Lancaster Sound, to await the following year which would unlock the front door to the high Arctic. Albert Harbour is a narrow strait between Baffin and a small adjacent island, a mere hole-in-the-wall surrounded by brooding cliffs of sheer barren rock which rise in places to almost three thousand feet. A few Eskimos lived there – there are not many even today – and at the time of Bernier's visit the only habitation other than sealskin tents was a wooden hut, rejoicing in the title of whaling

station, where Captain Mutch of Dundee looked after the affairs of the occasional Scottish whaler which was otherwise the only visitor.

The arrival of the government ship was a notable event for the entire district of Pond Inlet. Some Eskimos travelled 20 or 30 miles a day by dog sledge to meet Bernier with whom there was always a warm relationship. He had previously embarked three Eskimos as part of the crew, mainly to work dogs and hunt seals which were necessary for food and as a protection against scurvy. One of these three, by name Kanaka, was appointed official interpreter to the expedition.

Meanwhile, as November cold set in, everyone was hard at work preparing for the siege of winter. Snow was banked along the sides of the ship as insulation, emergency food and clothing was placed in igloos in case the *Arctic* had to be abandoned because of fire, and the carpenter covered in the upper deck by a wooden shelter. The engineers shut down the boilers, the funnel was lowered and all hands settled down to a routine in which oil lamps and stoves – fired largely by small coal sifted from the boiler room ashes – provided a bare sufficiency of light and heat in the waning mid-day glimmer of Arctic daylight.

Bernier was a good leader. From time to time he would arrange events to relieve the monotony – sports and rifle shooting with small prizes, a dinner on the birthday of King Edward VII, celebrations in honour of individual anniversaries – in all of which the Eskimo community took part. With the approach of Christmas, Captain Bernier determined to mark the occasion with every possible tradition which circumstances would permit. Kanaka was sent ashore with an open invitation for all Eskimo families to spend Christmas Day on board, and Captain Mutch was asked to join the fun. In his words, Bernier instructed the chief steward to prepare "a good Canadian dinner" for a hundred guests. As it turned out, this was an underestimate and Christmas Day, 1906, was something to remember.

It fell on a Sunday that year. In the forenoon, as the Captain followed his usual observance of Divine Service, early visitors joined most of the officers and crew in their simple litany. To the Eskimos, who were accustomed to a nomadic hunting life, Albert Harbour was as much home as anywhere. But for the men of the *Arctic,* with their thoughts far away in all parts of Canada, there must have been a poignant awareness in the familiar prayer that "...we may return in safety to enjoy the blessings of the land with the fruits of our labours."

The *Arctic* was a small ship. Below decks there was little space where every corner was cluttered with gear of some kind and men had only the privacy of their cramped berths. But the ship had been freshly cleaned, family photographs and decorations appeared from nowhere, and the shuffle of seaboots and mukluks on decks and ladders was accompanied by wondering chatter as visitors and crew exchanged greetings. By one o'clock 120 Eskimos had arrived. It would not have been possible to seat a quarter of that number in the tiny messrooms of the *Arctic,* and the party must have been held in the winter house on deck. There is no record of what they had for dinner. The resources of the ship would have been quite unable to produce the kind of fare which would appear today in a Canadian Coast Guard icebreaker, and probably seal meat was on the menu, a dish greatly to be preferred by most of the guests. Afterwards there was lashing of strong, sweet ship's tea and coffee, black as the Arctic night, and for the children twists of toffee made in the galley.

The whaling station at Pond Inlet, September 1906.





Captain Bernier proclaiming possession of Baffin Land for Canada in the name of Edward VII, November 9, 1906. It being the King's Birthday a royal salute was fired as the flag of the Dominion of Canada was hoisted.

By this time the party was in full swing. Following a short speech by Captain Bernier, in which all on board were addressed as Canadian, there was much goodwill and the crew produced the pride of the ship – their pianola and the gramophone. There were songs and juggling, acrobatic turns and wrestling, and before long everybody was dancing to the scratchy strains of the music. The dim light of deck lanterns flickered on flags decorating the dark walls as feet thumped and stamped and the voices of men, women and children joined in song. On the stroke of midnight, in the greatest good humour, the visitors went ashore to their homes.

It was indeed a wonderful Christmas Day – a time for charity in the best sense of the word, a time for mystery and wonder, a time for children. In the silence of the long Arctic winter men had time to think on these things. Duncan Campbell Scott struck a note in tune with this when he wrote:

But here a peace
deeper than peace is furled,
enshrined and chaliced
from the changeful hour;
the snow is still,
yet lives in its own light;
here is the peace
which brooded day and night
before the heart of man
with its wild power
had ever spurned
or trampled the great world.

FOUR HOUR RESCUE

by R.G. Towers
Regional Public Affairs Officer
Atlantic Region

The calm of the Labrador wilderness was shattered by the welcome sound of the engines of search and rescue aircraft. Four survivors, two severely injured, were about to be plucked from the site of their downed aircraft, and for the federal agencies who co-operated in the rescue, it must have been something of a record.

From the first alarm by an alert air traffic controller to the delivery of the survivors to hospital, the rescue mission has lasted only four hours.

Ronald Chase, an air traffic controller at Moncton, N.B., triggered the rescue. He alerted the Search and Rescue Co-ordination Centre at Halifax, and within three hours a para-rescue team from 413 Squadron CFB Summerside, P.E.I., jumped into the crash site. Within the hour two Pegasus helicopters based at Wabush, Labrador, picked up the survivors and transported them 32 miles to Labrador City.

Fast work by the co-operating federal agencies responsible for the safety of aircraft operations was credited with saving the lives of the two severely injured survivors.

The American registered Cessna 420 aircraft with four persons on board was on a flight from Sept Iles, Que., to Fort Chimo, Que. – a distance of 600 air miles over an almost completely isolated and uninhabited area.

The flight plan passed the aircraft over Labrador City, and Shefferville, Que., the only inhabited areas on the route. Overflying Labrador City, the aircraft experienced difficulty in maintaining altitude. Through direct radio contact with the Ministry of Transport Air Traffic Control Centre at Moncton, the pilot was cleared to fly at a low altitude due to severe icing conditions. At that time, the pilot expressed no concern for the safety of the aircraft; however, Ronald Chase, the controller responsible for the aircraft through the Moncton air traffic control area, sensed something was amiss and tried to contact the aircraft several minutes later. He received no response.

The veteran controller, fearing that the aircraft was in extreme difficulty or had crashed, alerted the Armed Forces Rescue Co-ordination Centre at Halifax.

Fortunately, at that time one of the aircraft operated by 413 Rescue Squadron had just departed Summerside, en route to Halifax, and was immediately diverted to the search area 450 miles to the north. The Buffalo aircraft piloted by Major Jim McComb with two paramedics aboard was fully equipped for search and rescue operations. In fact, the Cessna 420 aircraft had crashed tail first into extremely rough country and was completely destroyed by fire. All four persons aboard received serious injuries, one person was in critical condition.

Despite the difficulty of flying through deteriorated weather conditions in the area, Major McComb conducted the search immediately and located the downed aircraft north of Labrador City. Conditions at the drop site were considered hazardous even for the well-qualified airborne medic team of Sargeant Bernie Fitzgerald and Master Corporal Jerry McNutt.

The survivors, all United States citizens, have nothing but praise for Air Traffic Controller Chase, the Search and Rescue Co-ordination Centre, and the para-medics team.

NATIONAL SYMPOSIUM ON MARINE POLLUTION
SYMPOSIUM NATIONAL SUR LA POLLUTION MARITIME

Senior federal, provincial and shipping officials met in Ottawa, November 5-6 to discuss marine pollution.

The exchange of ideas at the Ministry of Transport-sponsored symposium will lead to wider sharing of information on environmental and pollution research, and more co-operation in fighting oil spills.

Top level speakers from the government and the marine community took part in the proceedings. Among them were Transport Minister Jean Marchand, Environment Minister Jeanne Sauvé, Regional Economic Expansion Minister Don Jamieson, Dr. P.D. McTaggart-Cowan, Executive Director of the Science Council of Canada, Dr. F.P. Davidson, a Senior Research Associate at the Massachusetts Institute of Technology, Andy Chatwood of Newfoundland Refining Ltd., Capt. C.D. Pole of Canada Steamship Lines and B.E. Smith of Gulf Oil Corporation. The symposium was under the chairmanship of Roy Illing, Administrator of the Canadian Marine Transportation Administration.

De hauts fonctionnaires fédéraux et provinciaux ainsi que des dirigeants de l'industrie maritime se sont rencontrés à Ottawa les 5 et 6 novembre pour discuter des problèmes soulevés par la pollution maritime.

Les échanges d'idées lors de ce symposium tenu sous les auspices du ministère des Transports, engendreront des échanges plus fréquents d'information quant aux programmes de recherche en cours et une plus grande coopération dans la lutte contre la pollution.

De prestigieux représentants du gouvernement et des milieux maritimes ont pris part aux diverses séances dont la ministre des Transports, M. Jean Marchand, le ministre de l'Environnement, Mme Jeanne Sauvé, le ministre de l'Expansion économique régionale, M. Don Jamieson, le Dr. P.D. McTaggart-Cowan, directeur général du Conseil des Sciences du Canada, le Dr. F.P. Davidson, principal chercheur associé de la Massachusetts Institute of Technology, M. Andy Chatwood de la Newfoundland Refining Ltd., Capt. C.D. Pole de la Canada Steamship Lines et M. B.E. Smith de la Gulf Oil Corporation. Le symposium était présidé par M. Roy Illing, Administrateur de l'Administration canadienne du transport maritime.

Deputy Minister O.G. Stoner, Dr. F.P. Davidson and Roy Illing, Administrator of the Marine Transportation Administration, discuss pollution matters during the symposium.

Le sous-ministre O.G. Stoner, le Dr. F.P. Davidson et M. Roy Illing, l'administrateur des Transports maritimes, discuttent de pollution maritime au cours du symposium.



Jeanne Sauvé, Minister of the Environment, speaks on the need for further preventative steps and research for protection against oil spills.

Mme Jeanne Sauvé, ministre de l'Environnement, discourt sur le besoin de nouvelles mesures préventives et de nouveaux programmes de recherche pour lutter contre les déversements d'hydrocarbures.



"À QUOI EST DU LE DÉLAI"

par Sandra Murphy
Préposée à la réalisation des projets

La "paperasse" fait partie de notre vie. Elle se présente à nous dès l'école et nous suit tout au long de notre carrière; on la retrouve au bureau des passeports, au comptoir des douanes, à la clinique médicale et surtout au bureau de l'impôt. Voilà pour le côté humain!

Parlons maintenant de choses nécessaires à la vie: la nourriture que nous mangeons, les vêtements que nous portons, les matériaux dont sont faits nos maisons de même que les biens que nous exportons et dont d'autres dépendent.

Il faut en moyenne, 46 documents pour réaliser une expédition internationale (360 exemplaires par expéditions). Cette paperasse coûte de UN à TROIS MILLIARDS DE DOLLARS par année. Qui se soucie qu'il faille un document de plus? Qui pense à toutes les dépenses qu'entraîne cette paperasse et à toutes les économies qu'on pourrait réaliser grâce à son élimination?

Oui, quelqu'un y pense! En effet, ce sujet préoccupe tellement le ministère des Transports, de même que d'autres ministères et des associations commerciales, qu'une organisation a été mise sur pied pour combattre cette routine administrative. On l'a baptisée: "Organisation canadienne de simplification des pratiques commerciales" (COSTPRO).

En 1971, le Centre de développement des transports du MDT s'est efforcé d'établir une collaboration entre le gouvernement et l'industrie en vue de faciliter le mouvement des marchandises au sein du commerce canadien.

En 1972, une entente a été conclue pour la création d'un organisme industriel/gouvernemental, (COSTPRO), dont le rôle était "de veiller à ce que les exigences de l'information nécessaire à la bonne marche du commerce au Canada n'entravent pas le transport multimodal et international des marchandises, de même que d'améliorer l'efficacité des installations de transport et des terminaux en réduisant la paperasse et en intensifiant l'utilisation des techniques automatiques d'analyse de données des systèmes de renseignements sur le fret".

Sept ministères et dix associations industrielles ont déjà contribué à la création de COSTPRO.

Vu les relations mutuelles de plusieurs ministères et la diversité du secteur privé, la tâche d'assurer la direction et une expertise technique continuelles a été confiée à un organisme qui a beaucoup d'expérience dans la gestion de programmes complexes de recherche et de développement relatifs aux transports. Le Centre de développement des transports continuera à fournir les services de secrétariat. Un programme quinquennal a également été prévu sous la tutelle de Robert Milne du CDT.

Ayant soulevé un certain intérêt, le COSTPRO venait de faire ses premiers pas. Il a atteint son objectif principal, c'est-à-dire la création d'un comité d'évaluation qui tiendrait compte de tous les domaines touchant au transport des marchandises, tant national qu'international. Grâce à des enquêtes, on a pu mettre sur pied un programme d'ensemble, touchant à tous les problèmes présents et futurs. Ce programme porte maintenant sur quatre secteurs principaux:

1. L'amélioration des systèmes traditionels de gestion des données concernant le commerce et le fret tout en respectant les limites imposées par les lois et règlements actuels.
2. L'introduction et l'application de systèmes et de codes modernes d'analyses automatiques de données.
3. L'identification et l'élimination des obstacles légaux.
4. La mise en oeuvre d'un programme coordonné d'éducation du public pour mettre en valeur les trois premiers secteurs.

Jusqu'à maintenant, le COSTPRO s'est surtout fait valoir dans le premier secteur. Par exemple, grâce au Canadian Trade Document Alignment System, 12 formules différentes, destinées à l'expéditeur, ont été remplacées par un seul document sur lequel tous les renseignements nécessaires sont dactylographiés. Cette initiative a permis à elle seule de réduire de 70% les frais, et tous les expéditeurs peuvent en profiter. Touchant surtout l'analyse des données d'exportation, ce système est accepté au niveau international et peut épargner plus d'un milliard de dollars par année. Grâce à des séminaires éducatifs à l'échelle nationale, le COSTPRO encourage l'utilisation de ce système dans le secteur public et dans l'industrie privée. On étudie actuellement les possibilités d'application du système aux importations et à d'autres utilisations au Canada.

L'introduction de nouveaux systèmes d'analyse automatique des données est nécessaire pour permettre de faire face à l'accroissement continu du volume de commerce, et c'est là qu'entre en cause le deuxième secteur. En 1984, le volume du commerce aura doublé, et nous n'aurons ni les installations ni la main-d'oeuvre nécessaires pour faire face à la situation. Il est temps de faire appel aux ordinateurs. On peut se consoler à la pensée que, dans la période d'inflation généralisée que nous connaissons, le coût des ordinateurs décroît rapidement.

L'évolution dans les transports a donné naissance à un abondant matériel. De la pirogue, nous sommes passés au bateau à voile et à vapeur. La roue nous a mené jusqu'aux chemins de fer, aux automobiles et aux camions. Le ballon a donné naissance aux avions à réaction géants et aux avions supersoniques. Du traîneau, nous connaissons maintenant le dernier descendant: l'appareil à suspension magnétique et le moteur à induction linéaire.

Le domaine des communications a évolué lentement et l'homme est passé successivement des tablettes de pierre, au crayon, au parchemin, aux registres, aux dossiers, aux formules, au microfilm, au ruban magnétique et au lecteur optique de caractère. Les signaux ont modestement débuté avec les tam-tam pour aboutir au facsimilé, au câble, à la radio et au laser.

Malgré tout ce matériel, il y a toujours un chaînon manquant. Comment peut-on raccorder tout cela? L'homme possède actuellement la seule machine qui puisse rassembler ledit matériel afin d'assurer un transport efficace des marchandises et la documentation qui en découle: l'ordinateur.

Le partisan des systèmes dira: "En effet, un ordinateur est nécessaire". Des mois de recherche, de planification et de mise au point donneront naissance à un système d'ordinateur complexe et coûteux. Par exemple, Air Canada a implanté ACCESS, un système d'ordinateur qui contrôle le transport des marchandises; le CN possède son WIN; l'aéroport Heathrow de Londres a le système LACES; Hambourg possède sa banque des données et ainsi de suite. Est-ce la solution? Peut-être pas encore tout à fait, mais c'est un début. N'a-t-on jamais pensé que notre ordinateur pouvait être relié à l'ordinateur des douanes ou à celui du camionneur? Pourra-t-on échanger des données directement entre le Japon et le Canada? Ce sont les problèmes auxquels doit faire face le COSTPRO. Ces problèmes ont clairement fait ressortir le besoin de relier les uns aux autres les systèmes internes de traitement automatisé de l'information (TAI) et la nécessité de tenir compte des autres partenaires commerciaux. Ce problème doit être solutionné au niveau de la planification d'ensemble avant que tel ou tel système soit choisi. Il incombe donc aux directeurs de compaqnies plutôt qu'aux commis préposés à l'expédition de résoudre cette question, à la personne chargée d'établir les politiques au gouvernement plutôt qu'au petit fonctionnaire de la Fonction publique.

Pour faciliter le traitement de l'information sur le commerce par l'entremise des systèmes TAI, COSTPRO croit que les directives suivantes doivent être respectées:

1. Grâce à l'analyse et à une conception de base, il faut créer un système d'information complet et cohérent sur le commerce.
2. En raison de facteurs tels que les caractéristiques fonctionnelles des sous-systèmes, l'urgence des améliorations ainsi que la possibilité et la nature de la systématisation, les procédures et les priorités doivent être soigneusement établies.

Un système cohérent d'information sur le commerce, composé de quatre sous-systèmes, peut être conçu à partir de ces points de vue, qui sont également ceux du Comité des systèmes d'information sur le commerce (COTIS).

Le premier sous-système englobe les transactions commerciales et la finance. Le deuxième sous-système comprend les installations en matière de transactions commerciales et les installations de transport. Le troisième sous-système touche les installations d'expéditions douanières. Le quatrième sous-système vise surtout à accélérer les formalités bureaucratiques nécessaires à l'expédition.

Ce concept sera bientôt mis à l'épreuve par la transmission automatique de données d'un pays à l'autre et par l'expédition de marchandises. Des essais préalables ont été effectués entre les États-Unis et le Royaume-Uni. Ils ont révélé que des systèmes sans document fonctionneront si les pays coopérants effectuent des changements au niveau des exigences légales traditionnelles touchant les vérifications et les contre-vérifications dans le domaine du financement et du contrôle de l'importation et de l'exportation. Ce qui nous amène aux problèmes auxquels fait face le COSTPRO dans le troisième secteur: "l'identification et l'élimination des obstacles juridiques".

Les intérêts contradictoires sont à la source du problème: la promotion du commerce se heurte aux barrières de la réglementation tandis que les organismes offrant des services tel que les transports tentent de maintenir l'équilibre. Qu'est-ce qui les arrête donc?

C'est la paperasse, qui quelque fois est inutile et encombrante. Par exemple, est-il nécessaire qu'un expéditionnaire démontre par des documents que la marchandise dangereuse a été manipulée prudemment, lorsque des étiquettes telles que "marchandise dangereuse, manipulez prudemment" ont été apposées sur les caisses de marchandises?

L'homme à règlements ne se rend-t-il pas compte qu'un seul document supplémentaire peut bouleverser le cheminement d'une paperasse déjà inutile? Il faut donc tenir compte de tous les partenaires en commerce.

Le COSTPRO n'a pas encore fourni de réponse complète à cette question, mais ses membres y travaillent déjà. On est certain d'une chose: le problème est là. Le COSTPRO essait d'éliminer la paperasse qui limite deux industries au faîte de leurs possibilités: l'industrie du transport, qui peut transporter plus rapidement et plus efficacement que jamais des marchandises, de même que l'industrie des communications qui peut servir de soutien à l'industrie du transport par l'entremise d'ordinateurs et de banques de données. Le COSTPRO peut diriger ces deux valeurs en puissance vers un seul but.



La congestion dans les terminaux est le résultat de marchandises en retard à cause d'erreurs ou de pertes de documents.

"WHAT'S THE HOLD-UP"

by Sandra Murphy
Costpro Project Officer

Documentation is a word commonly accepted in every aspect of our daily lives. It accompanies us throughout our school years, follows us into a career, is with us at the passport office, customs' declaration counter, hospital clinic and of course the income tax office. So much for human processing!

Now what about the goods upon which our livelihoods depend? The food we eat, the clothes we wear, the materials to build our homes, as well as those goods we export and upon which others depend?

It is a fact that there are 46 documents involved for an average international shipment, with 360 copies per shipment. The cost of such documentation in Canada amounts to between $1-billion and $3-billion per annum. Does anyone really care if one more document is required? Does anyone think of the expense involved or the potential savings to be gained by elimination of any of these documents?

Yes, someone cares! In fact, the Ministry of Transport, along with other government departments and trade associations cared enough to form an organization to battle this red tape. This is COSTPRO, the Canadian Organization for the Simplification of Trade Procedures.

In 1971, the Ministry's Transportation Development Agency assumed a lead role in the development of industry/government cooperation for facilitation of goods movement in Canadian trade.

By 1972, agreement had been reached on the creation of a joint industry/government body (COSTPRO) which would "seek to ensure that information requirements used in servicing Canada's trade do not hinder the physical movement of cargo intermodally and internationally, and in fact, to improve the use of existing transport and terminal facilities by a combination of document simplification and the wider use of automatic data processing (ADP) techniques in cargo information systems".

Seven government departments and 10 industry associations have subscribed to COSTPRO's creation.

Because of the inter-relationships between several departments and with a broad range of the private sector, the task of providing continuing leadership and technical expertise has been assigned to a group already well experienced in the management of complex transport research and development programs. The Transportation Development Agency will continue to provide the secretariat. An extensive five-year program has been planned under the leadership of TDA's Robert Milne.

With the interest generated, COSTPRO's initial steps were apparent. The primary objective was to form a sounding board for inputs that took into account all fields involved in the movement of cargo, both domestic and international. This has been achieved. Exploratory studies have made it possible to develop a comprehensive plan, encompassing all the problems, both present and foreseeable. The program has now developed to follow four functional areas:

1) The improvement of traditional trade and cargo data management systems within the limits afforded by existing legal and regulatory regimes.

2) The introduction and implementation of advanced automatic data processing systems and codes.

3) The identification and elimination of legal barriers.

4) The implementation of a coordinated education and public education program to enhance the first three areas.

To date, COSTPRO's most significant step forward has been in the first functional area. The inauguration of the Canadian Trade Document Alignment System has done away with 12 different forms required for the shipper and has replaced them with one master document on which all the required information is typed. This one initiative alone could cut costs by 70% and is available to any shipper. Of principal interest to export processing, this system has international acceptance and may save the government over $1-billion per annum. Through nationwide educational seminars COSTPRO is promoting public and private use of this system. Applications for import and other Canadian uses are currently being studied.

The introduction of new automatic data processing systems is needed to cope with ever-increasing trade, and this is where the second functional area enters. Trade volume will double by 1984 and neither the facilities nor the manpower are available to handle the situation. The day to liberate computers has come. It is consoling to note that with inflation on all sides, the costs of computers are rapidly decreasing.

Progress in transportation has brought an abundance of new hardware. Man has progressed from the dugout through sail and steam. The wheel has developed to rail, automobile and truck. The balloon has brought us to jumbo jets and supersonic planes; the sled has its latest incarnation – the MAGLEV and linear induction motor.

In the field of communications there has been the long transition from stone tablets to pen, parchments, ledgers, files, forms, microfilm, magnetic tape, optical character readers. Signals have come from drum beating to facsimile, wire, radio and laser.

Yet with all of this hardware, there is still the missing link. What can bring them all together? Man now has in his power the one machine that can connect the software that would bring about efficient, smooth movement of goods and its corresponding information – the computer.

The Systems man will say, "Fine – We need a computer". Months of research, planning and development will result in an expensive, complex computer system. For example, Air Canada introduced ACCES, a computer system for cargo management; CN has its WIN system; London's Heathrow Airport has its LACES system; Hamburg has the Hamburg Data Bank and so on down the line. Is this the way out? Essentially, it is a beginning. But it is not enough. Has anyone given thought to how his computer can interface with the customs' computer, or the trucker's computer? Will it be possible to transmit data directly between Japan and Canada? These are the questions that face COSTPRO. These questions have clearly outlined the need for interfacing in-house systems, and this in turn means that careful consideration should be given to other participants in trade. This is a question to be answered at the corporate level before a particular system is chosen. Trade facilitation is therefore for the managing director of the large corporation rather than for the shipping clerk; for the policy maker in government rather than for the junior public servant.

COSTPRO believes that in order to facilitate trade information processing through systems, the following steps must be taken:

1) Through a basic analysis and conceptual design, an overall image of a comprehensive trade information system must be created.

2) In view of such factors as the functional characteristics of subsystems, the urgency of development, feasibility and the status of the systemization, procedures and priorities must be carefully worked out.

Thinking along these lines, which is the approach being taken by the Committee on Trade Information Systems (COTIS) in Japan, a comprehensive trade information system composed of four sub-systems can be conceived. The first sub-system handles trade transactions and finance. The second sub-system is a combination of trade transaction activities and

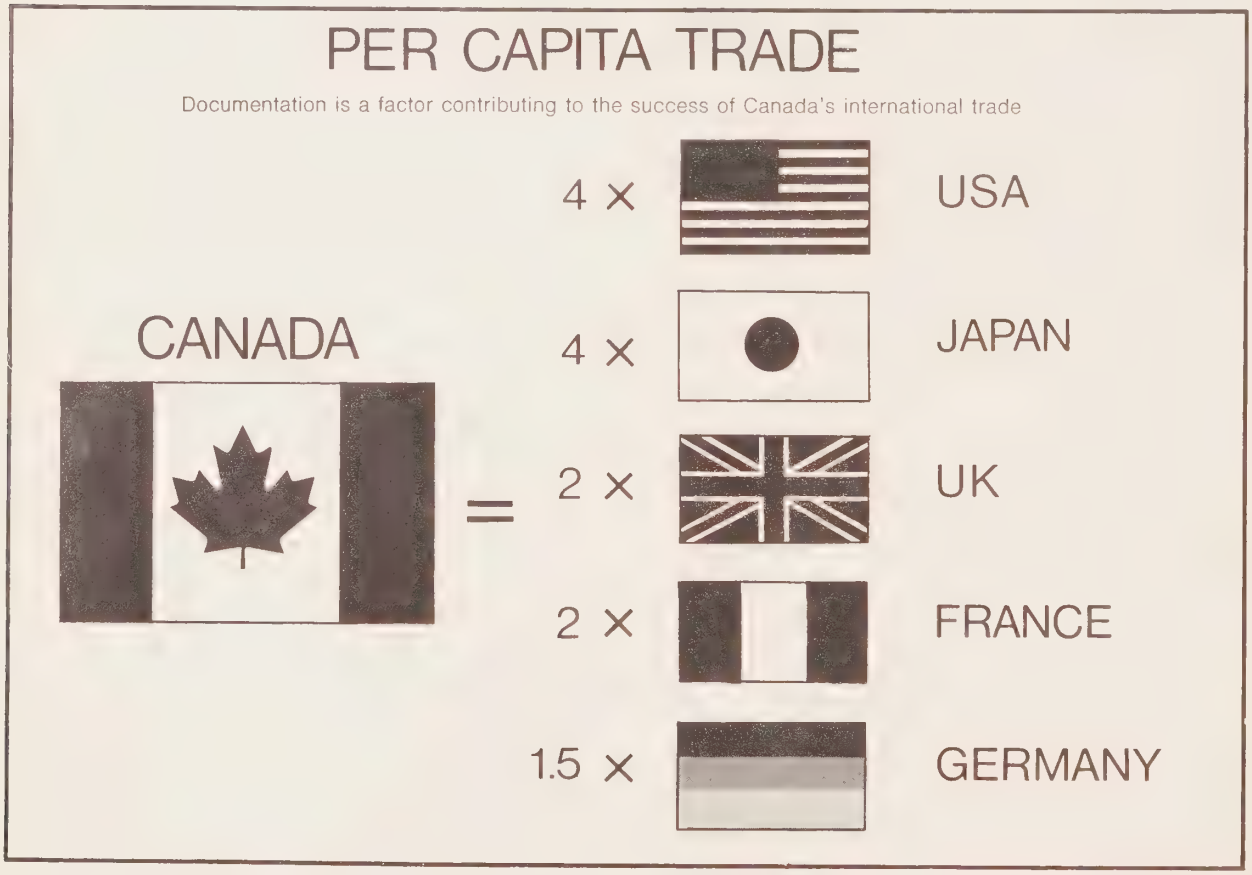
transport activities. The third sub-system is centered around customs clearance activities. The fourth sub-system is mainly concerned with facilitating the bureaucratic formalities necessary for shipping.

This concept will be tested in the near future by means of country-to-country electonic data transmission coupled with the physical transmission of shipments. Preliminary tests have been conducted between the United States and the U.K., and these tests have shown that paperless systems will work provided the co-operating countries implement changes in the traditional legal requirements for checks and counter-checks in import and export financing and control. This brings up the problems confronting COSTPRO in the third functional area, "the identification and elimination of legal barriers."

Conflicting interests are at the root of the problem, with trade promotion pulling against regulatory controls and service agencies (such as transport) attempting to provide a balance. So what stops them? Documentation rules that are sometimes unnecessary and cumbersome. Is it really necessary, for example, for a shipper to produce documents to ensure that dangerous cargo has been handled properly, when the cargo is already labelled with various instructions "Dangerous goods, handle with care"?

Does the regulations man ever ask himself how one more document can disrupt an already time-consuming flow of paper? Again, it means that careful consideration should be given to all "participants" in trade.

COSTPRO has not the complete answer yet, but its members are working on the problem. One thing is sure. The problem exists. COSTPRO is trying to eliminate the red tape that is restricting two industries at the peak of their potential: the transportation industry, which is capable of moving goods faster and better than ever before, and the communications industry, which is advanced enough to provide a perfect back-up to transportation through computers and data display. It is the fusion of these two potentials into a reality that COSTPRO wants to achieve.



FROM SNOW TO BURNING SAND



View from the observation deck of the recently completed air terminal building, Medina, Saudi Arabia. Saudi Arabian Airlines (Saudia) Boeing 737 in the background. Photo Courtesy Financial Post

D.G. (Don) MacKinnon recently returned from a one-year international assignment with the United Nations in the Middle East, and is now the Regional Participative Work Improvement Analyst in the Western Region.

Mr. MacKinnon, born and raised in Vancouver, served in the Navy during World War II and later was commissioned in the Royal Canadian Engineers. He joined Transport in 1961, serving in Ottawa with the old Airports Branch. In 1966, Mr. MacKinnon was seconded to Treasury Board on a special assignment preparatory to the introduction of collective bargaining for the Public Service. Returning to Transport in 1967, he moved to Edmonton in 1969. He served as Executive Assistant to the Regional Administrator until late 1972 when he accepted a one year assignment with the International Civil Aviation Organization. A year later he was assigned as an advisor to the Saudi Ministry of Defence and Civil Aviation. He returned to Edmonton early this year.

To serve with a specialized agency of the UN such as ICAO, especially in the Middle East, is an opportunity of a lifetime in spite of the great climatic differences between Edmonton and Jeddah in Saudi Arabia.

My wife and I left Edmonton on a typically cold December day in 1972 and after a few days in Ottawa, journeyed to Montreal for an ICAO Technical Assistance Bureau briefing, then to London for a meeting with my predecessor and an en route stop at Beirut, Lebanon, to obtain the necessary Saudi Arabia visas and visit the Civil Aviation Training Centre.

The final leg of our trip was via Saudi Arabia Airlines Boeing 707 to Jeddah where our arrival coincided with the ending of the Haj Pilgrimage when over a million Moslems from all over the world gather to perform religious rights at Mecca and Medina.

We found Jeddah International Airport crowded with Moslems awaiting return flights to their homelands. Saudi Arabia has strict laws which prohibit alcohol or pork products – their use offends Saudi religious beliefs – but since we had neither, our clearance through customs was quick. We rented a fully air-conditioned

apartment in a large former embassy overlooking the Red Sea for 750 rivals, about $200 a month.

Jeddah is located on the easterly edge of the Red Sea and the west coast of the Arabian Peninsula some 700 miles south of Suez and 750 north of Adan. It has for over 1,000 years been the port for Mecca and Medina, Islam's foremost holy cities.

Jeddah is hot and humid with an average temperature of 80° throughout the year. Temperatures go to 120° in summer, July and August being the hottest months. September and October tend to be more humid while January and February are usually pleasantly cool, and at times cold. Occasionally, there is a slight rainfall in November and December and there may be rain at times in January and February. However, the total rainfall is negligible.

At no time is it cold during the day. Evenings may be cold enough for a suit or woollen dress but few woollen clothes are needed. The souk (market) in Jeddah is a labyrinth of covered and uncovered alleys abounding in shops selling almost everything. Most of the electrical wares are Japanese. Local prices have increased in recent years although electrical, radio and photographic equipment are still cheaper than Canada. There are also many large modern air-conditioned shops. Notwithstanding the ban on alcohol, there is a very active social life. Clubs as such are not permitted and there is no central meeting place for the foreign community. There is however, a monthly coffee morning for wives at the British Ambassador's residence.

The Creek, some 30 kilometres North of Jeddah along the Medina Road, is the centre of swimming and sailing. Many members of the foreign community rent beach chalets in compounds located on either side of the Creek, and facilities are excellent.

Football and cricket matches are played regularly against Saudi Teams and squash, tennis, golf, darts and other activities are available at the U.S. and British Embassy compounds.

There are no cinemas, dance halls, theatres, museums, concerts, nightclubs, bars, or any other form of public entertainment.

Jeddah's cost of living was about twice that of Edmonton. Countless modern supermarkets stock virtually all Western food stuffs except pork products and liquor.

Saudi Arabia's riyal is difficult to exchange outside the Kingdom. Early in 1973, it was revalued upward to 3.55 from 4.00 to the American dollar, which did not benefit UN personnel who are paid in U.S. dollars.

The Moslem religion in Saudi Arabia is more strictly observed than in most other Moslem countries. Alcohol is totally forbidden and persons found guilty of contravening the laws are liable to severe prison sentences. Saudi women must be veiled in public. Consequently, European women are advised not to wear "revealing" clothes in public, including minidresses, shorts, etc.

Women shopping in the supermarkets or in the Souk should wear skirts covering their knees and have their arms and head covered. Women are forbidden to drive and are totally dependent on their husbands or chauffeurs.

Route structure of Saudi-Arabia Airlines covers a broad area. Twenty-three airports have been built in recent years; 13 are being upgraded to handle jet service.



Some customs of Saudi Arabia, which is the centre of the Islamic world, are at first strange. On our first morning, we were awakened at 0530 hours by the Muezzin's call to prayer – over a loudspeaker – from the Minaret of a nearby mosque. These calls to prayer are repeated five times a day.

During the month of Ramadan, the ninth month of the Mohammedan year, rigid fasting is observed. A devoted Moslem neither eats, drinks nor smokes from sunup to sundown. At sundown, ancient cannons are fired to denote the official daily fast ending.

Two TV stations operate in Riyadh and Jeddah respectively as well as local radio broadcasts in English at certain times of the day.

A race course in Riyadh features horse and camel racing in the cooler months. Betting, however, is forbidden.

The estimated population of Saudi Arabia is six million. The majority of the people are settled, the remainder are Bedouins or Nomads leading their herds from one grazing area to another.

The UN/ICAO Technical Assistance Mission consists of a Chief of Mission and an establishment of 19 advisors, four in Dhahran on the Arabian (formerly Persian) Gulf, in Riyadh, the capital in the middle of Saudi Arabia, and the remainder in Jeddah with the Headquarters of the Civil Aviation Department. The Mission operates on a dual funding system, the "Technical Assistance Program" and the "Funds in Trust Program" where the funds are provided by the Government of Saudi Arabia. The function of the mission is to give specialist advice, technical assistance and on-the-job training to Saudi Arabian nationals. Eventually, they will perform all functions on their own and the Mission will cease to exist. Advice is being provided in airport engineering, air traffic control, electronics, air transport, radio maintenance, fire, safety and rescue, airworthiness, telecommunications and flight operations. The Mission is truly international with personnel



His Excellency Sheikh Abdullah Mahdi, Director General of Civil Aviation, Ministry of Defence and Aviation, Saudi Arabia

from Australia, Canada, Sweden, New Zealand, Great Britain, The Netherlands, and the U.S.A.

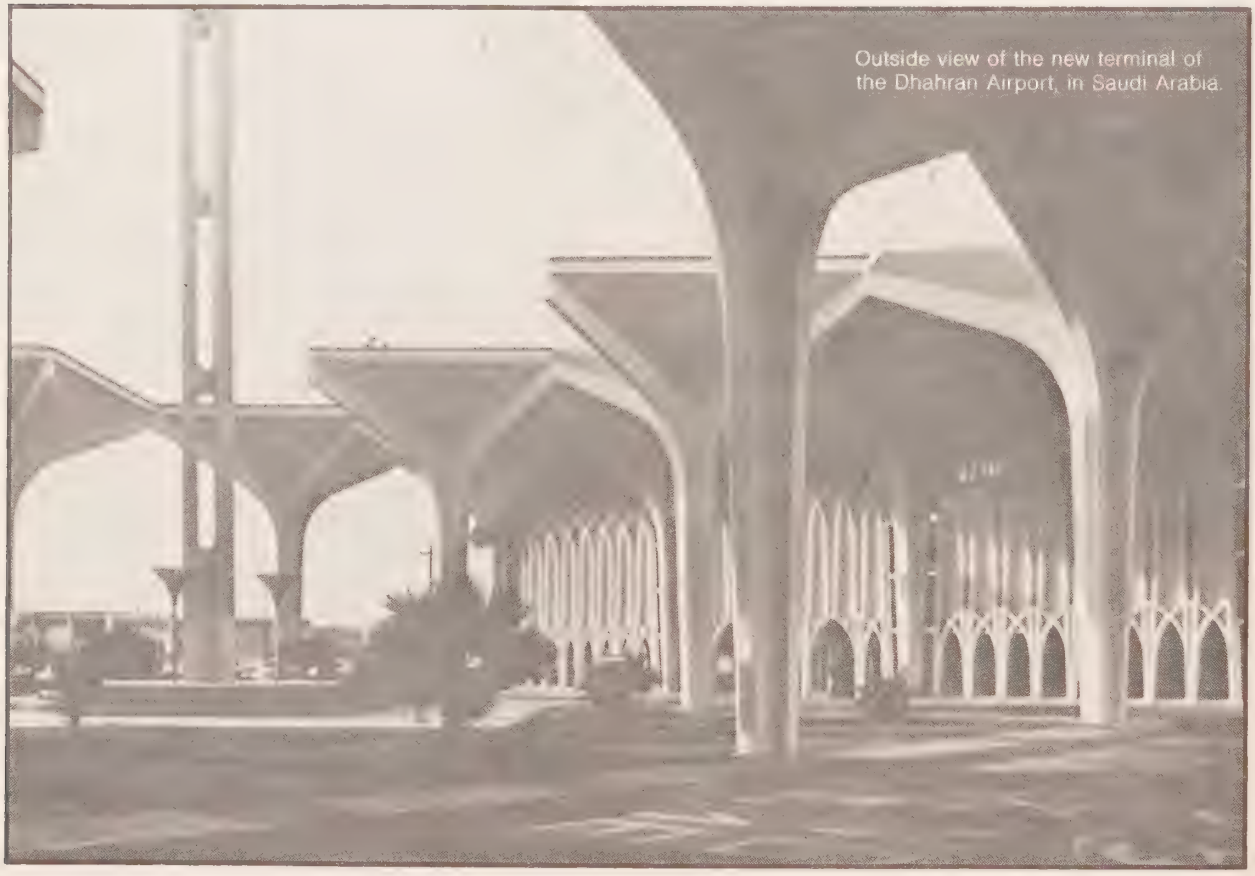
The work environment in the Ministry of Defence and Civil Aviation, where the Technical Assistance Mission operates, is fairly good, albeit a little crowded. All offices are air-conditioned and the majority of civil aviation advisors work with a Saudi counterpart. Once one adjusts to the Middle East work ethic it is fairly easy to operate. As oil revenues grow, more funds are becoming available for the development of civil aviation. Considerable progress has been made in the addition of air navigational aids, and approach lighting systems which are very important in desert environment, where landmarks are few and far between. One would think in a land of almost constant sunshine, navigational aids would not be too important. However, flight crews have told me that during a sand storm, visibility can be restricted up to 20,000 feet. The ICAO Jeddah Mission began to work under the Technical Assistance Program and the Fund in Trust Program in 1961. The scheme for training Saudi nationals was initiated in 1963 when English language courses were inaugurated at the Civil Aviation Training Centre in Jeddah. A second satellite training centre slanted to radio maintenance was opened at Dhabran in 1971. Saudi Arabia has performed very well in the

area of civil aviation international relations with the signing of many bilateral agreements.

The route structure of Saudi Arabian airlines covers a broad area both within the Kingdom and internationally. Twenty-three airports have been built in recent years, many of which are now or will be upgraded for pure jet service. A new Jeddah International Airport is being constructed north of the city. It will replace the present airport which is rapidly becoming surrounded by the upsurge in office, apartment and villa construction. This has caused concern in the Civil Aviation Directorate and in the UN/ICAO Technical Assistance Mission. ICAO airport engineers have been in the forefront of all airport construction in support of the Saudi engineers. Internationally, the Saudi Arabian Airlines provide jet service to London in the west, Frankfurt in the north, Bombay in the east and Ethiopia in the south. Talks are being held with a view to widening the network. The Civil Aviation Directorate which is headed by His Excellency Sheikh Abdullah Mahdi as Director General has a modern twin-engine aircraft equipped to calibrate navaids and landing instrumentation.

In the Saudi Arabian Government, the work day starts at 0800 and finishes at 1400 hours with no lunch break. Because of the climate, this makes a lot of sense. The work week is six days with Friday, the Moslem day of rest, off. There are two national holiday periods or four days each year, the feasts of E1 Fitr immediately after Ramadan and E1 Adha during the Haj.

In conclusion, it is my view that such an assignment, in spite of the inconveniences and frustrations, is very valuable experience for an M.O.T. employee. Such assignments give experience in working and living in a different culture and environment, in working within the framework of the UN and ICAO, in mixing with many nationalities and in operating in a foreign country.



Outside view of the new terminal of the Dhahran Airport, in Saudi Arabia.

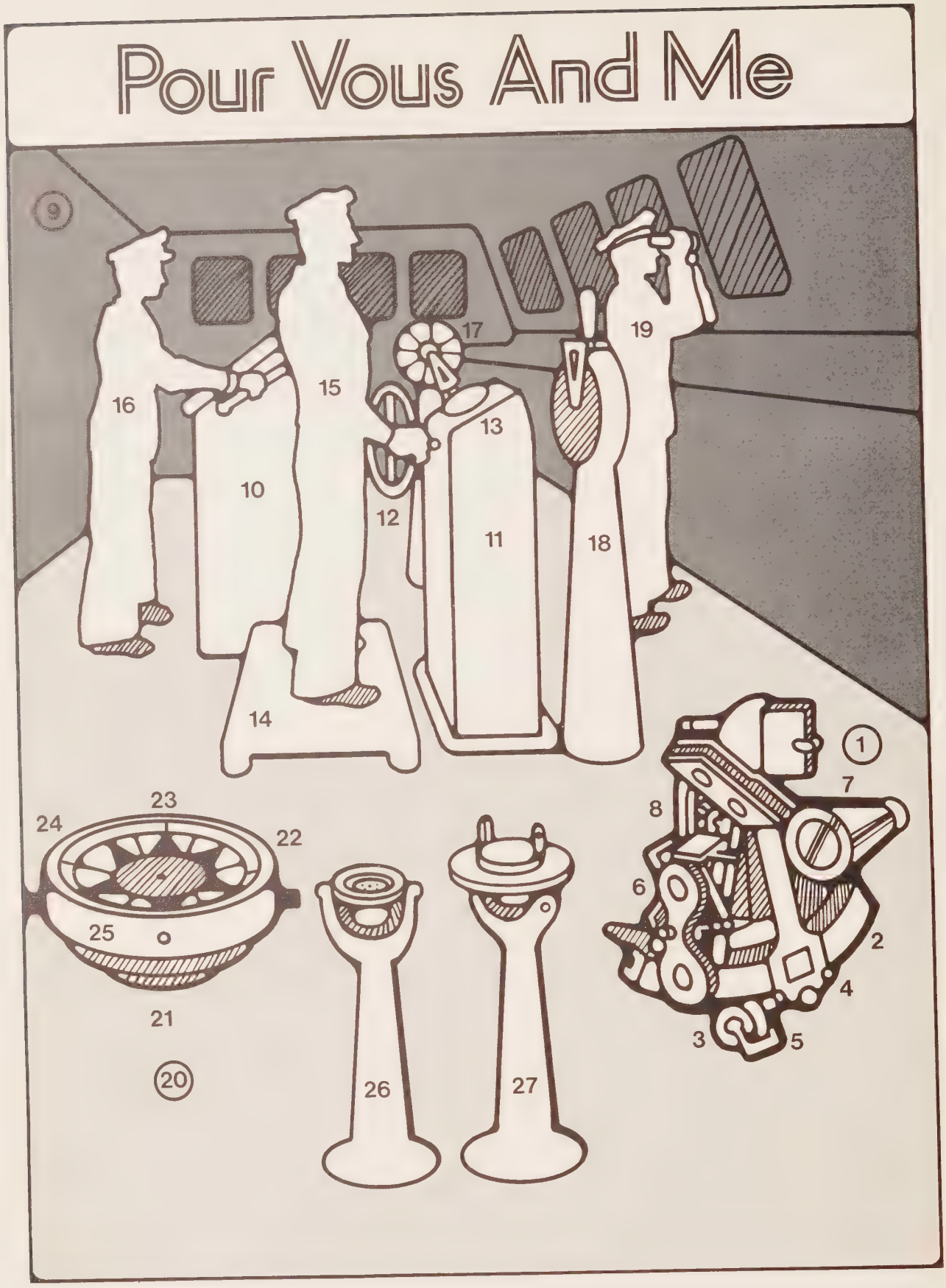






Transcan

Pour Vous And Me



Marine Navigation 1

1. SEXTAN
   LE SEXTANT
2. graduated arc
   le limbe
3. micrometer drum
   la roulette de réglage
4. index bar
   l'alidade
5. vernier
   le vernier
6. index mirror and horizon glass
   la grande et la petite pinnule
7. telescope
   la lonque-vue
8. grip
   la poignée de manoeuvre
9. THE WHEEL HOUSE
   LA TIMONERIE
10. the radar display unit
    le récepteur radar
11. the steering column
    le socle de barre
12. the steering wheel
    la roue de gouvernail
13. the steering compass
    le compas de toute
14. the quartermaster's (helmsman's (Am.) wheelsman's grating
    le caillebotis
15. the quartermaster (helmsman, (Am.) wheelsman)
    l'homme de barre (le timonier)
16. the navigating officer
    l'officier de route
17. the engine room telegraph
    le transmetteur d'ordre
18. the docking telegraph (Am. maneuvring telegraph)
    l'indicateur télégraphique de manoeuvre
19. the captain
    le capitaine
20. COMPASSES
    COMPAS ET BOUSSOLES
21. liquid compass, magnetic compass
    le compas liquide, un compas magnétique
22. compass card
    la rose des vents
23. lubber line
    la ligne de foi
24. compass bowl
    la cuvette de compas
25. gimbals
    la suspension à la cardan
26. repeater compass
    le répétiteur de compas gyroscopique
27. gyroscopic repeater with pelores
    le compas répétiteur avec alidade

PEGGY'S COVE FIRST!
UNE PREMIÈRE À PEGGY'S COVE!



At the ceremony to open the post office were, from left, Capt. Guy Williams, district Manager of Marine Services, MOT; Capt. Mel Lever, Superintendent of Lights, MOT; and W.L. Ryan, Director of Postal Services for Nova Scotia.

Lors de la cérémonie d'inauguration du bureau de poste, on remarquait la présence (de gauche à droite) du Capitaine Guy Williams, directeur des services de la marine du ministère, de M. Mel Lever, surintendant des feux, et de M. W.L. Ryan, directeur du service postal de la Nouvelle-Écosse.

The Ministry of Transport, in conjunction with the Post Office Department, has established the first known post office operating from a lighthouse. Ceremonies were held this summer at picturesque Peggy's Cove, N.S. to officially open the unique facility.

The idea was proposed by MOT's Atlantic Region Public Affairs Office, following an urgent inquiry from Post Office Officials on the availability of space in a Ministry of Transport building at Peggy's Cove to house a sub-post office.

Located on the lower floor of the lighthouse, the post office was in operation for the summer months under the guidance of Postmaster John B. Campbell. The facility is another attraction for the numerous tourists who visit the area each year.

Officiating at the opening ceremony were Captain G. J. M. Williams, District Manager Marine Services, and Captain M. C. Lever, Superintendent of Lights, Marine Services, representing the Ministry of Transport, and W. L. Ryan, Director of Postal Services, Atlantic Region.

The octagonal, 30-foot high beacon housing the post office was built in 1915. The original lighthouse was constructed in 1868 on a site 62 feet southwest of the present structure.

En collaboration avec le ministère des Postes, le ministère des Transports a ouvert le premier bureau de poste jamais établi dans un phare. L'inauguration de ce service s'est déroulée cet été à Peggy's Cove, endroit pittoresque par excellence.

Suite à une demande de renseignements du ministère des Postes, le Bureau des affaires publiques du MDT, région de l'Atlantique, avait proposé qu'on loge un bureau de poste secondaire dans un immeuble du ministère des Transports, à Peggy's Cove.

Situé au rez-de-chaussée du phare, le bureau de poste a été ouvert tout l'été sous la direction du maître de poste, M. John B. Campbell. Cette installation constitue une autre attraction pour les nombreux touristes qui visitent cette région chaque année.

Le phare octogonal de 30 pieds de hauteur a été construit en 1915 en remplacement d'un autre qui datait de 1868 et occupait un emplacement situé à 62 pieds au sud-ouest de l'ouvrage actuel.

Lors de l'inauguration, le capitaine G.J.M. Williams, Directeur régional des services de la marine, et le capitaine M.C. Lever, Surintendant des phares, représentaient le ministère des Transports. Ils étaient accompagnés du Directeur des services postaux de la région atlantique, M. W.L. Ryan.

NEW PARLIAMENTARY SECRETARY

UN NOUVEAU SECRÉTAIRE PARLEMENTAIRE



Dr. Cliff McIsaac, the new Parliamentary Secretary to Transport Minister Jean Marchand, is a former provincial cabinet minister with experience in dealing with transportation issues.

As Saskatchewan's Municipal Affairs Minister in 1966-67, Dr. McIsaac was involved in bringing together governments and local people to work out rail line adjustments. He lives at Unity, Sask., where he conducts a veterinary practice.

First elected to Ottawa as Member of Parliament for Battleford-Kindersley in July, 1974, he was named Parliamentary Secretary in September of the same year.

Dr. McIsaac was elected to the Saskatchewan Legislature in 1955, as MLA for the Wilkie Constituency, and served as Minister of Municipal Affairs and later as Minister of Education. He resigned his provincial seat in 1974 to run in the federal election.

Born August 30, 1930 in Prince Edward Island, Dr. McIsaac is a graduate of Prince of Wales College, Charlottetown, P.E.I.; the Nova Scotia Agricultural College, in Truro, and the Ontario Veterinary College in Guelph.

The Parliamentary Secretary and his wife, Marie, have five children.

M. Cliff McIsaac, le nouveau secrétaire parlementaire auprès du ministre des Transports, M. Jean Marchand, est un ancien ministre du Cabinet provincial qui a l'expérience des problèmes posés par les transports.

En tant que ministre des Affaires municipales de la Saskatchewan, en 1966-1967, M. McIsaac a pris part aux échanges entre les gouvernements et les personnes concernées au niveau local par les règlements apportés à la solution des problèmes ferroviaires. M. McIsaac réside à Unity (Saskatchewan) où il diriqe une clinique de médecine vétérinaire.

Tout d'abord élu député de Battleford-Kindersley au parlement d'Ottawa en juillet 1974, il a été nommé secrétaire parlementaire en septembre.

Il a été élu à la Législature en 1955 dans la province de la Saskatchewan comme député de Wilkie et a été ministre de l'Éducation après avoir tenu le portefeuille des Affaires municipales. Il s'est démis cette année de ses fonctions de député provincial pour se présenter aux élections fédérales.

Né le 30 août 1930, à l'Ile-du-Prince-Édouard, le docteur McIsaac est diplômé du Collège du Prince de Galles à Charlottetown, (Ile-du-Prince-Édouard), du Collège agricole de la Nouvelle-Écosse de Truro et du Collège vétérinaire de l'Ontario à Guelph.

Le docteur McIsaac et sa femme Marie ont cinq enfants.

RETIREMENTS / RETRAITES



D.G. Carty (at left), Central Region Manager of the Telecommunications and Electronics Branch (Air), on behalf of Regional Administrator D.A. Lane, presents R.H. (Rollie) Porter with a Certificate of Appreciation to mark 32 years of service with the Ministry of Transport. Mr. Porter's last post was Executive Assistant to the Regional Administrator, Central Region.

Au nom de M. D.A. Lane, directeur régional, M. R.H. (Rollie) Porter (à droite) se voit présenter par M. D.G. Carty, directeur de la région du Centre à la division des Télécommunications et de l'électronique, un certificat soulignant ses 32 ans de service au ministère des Transports. M. Porter occupait précédemment le poste d'adjoint exécutif à l'administration du Centre.



The Prime Minister's Trophy for the best annual fire prevention program by a Federal Government department was presented Oct. 10 by the Prime Minister to Transport Minister Jean Marchand. It was the second successive win for the Ministry of Transport's Air Transportation Administration. R.A. Harley, Chief, Airport Emergency Services, left, was on hand with Dominion Fire Commissioner Ross Switzer for the presentation which took place in the Prime Minister's House of Commons office.
(Ministry of Transport photo)

Le trophée du premier ministre, destiné à récompenser le meilleur programme de prévention d'incendie présenté par un Ministère du gouvernement fédéral, a été remis le 10 octobre par le premier ministre au ministre des Transports, M. Jean Marchand. L'Administration des transports de l'air du ministère se méritait cet honneur pour la deuxième fois consécutive. M. R.A. Harley, chef des services d'urgence des aéroports (à gauche), a été chargé avec M. Ross Switzer, commissaire fédéral aux incendies, de la présentation qui a eu lieu dans le bureau du premier ministre, à la Chambre des Communes.
(Photo ministère des Transports)

Suggestion Awards / Primes à l'initiative

James E. Mills	Kamloops, B.C.	$ 40.00
Georges T. Gauthier	Frobisher Bay, N.W.T.	$ 40.00
J.F. Malcolm	Destruction Bay, Yukon	$ 50.00
Serge M. Gauthier	Hull, Qué.	$ 50.00
Stan Wieczorck	Ottawa, Ont.	$ 50.00
Kerry G.A. Kirkpatrick	Maple Ridge, B.C.	$ 60.00
John Harris	Rexdale, Ont.	$ 60.00
Ronald J.A. Leduc	North Bay, Ont.	$ 90.00
Franck Gene Enns	Alert Bay, B.C.	$ 90.00
Craig S. Ross	Ottawa, Ont.	$ 90.00
Thomas G. Mactavish	Ottawa, Ont.	$ 90.00
Keith Wayne Statham	Delta, B.C.	$130.00
Gerhard Zerbe	Richmond, B.C.	$170.00
Joseph F. Rojc	Toronto, Ont.	$310.00

Ronald Creelman received a $780 award for suggesting modifications to the Baggage Conveyor Control. An automatic shutdown feature will be incorporated as an option, as a result of the suggestion.

M. Ronald Creelman s'est mérité une prime à l'initiative de $780. pour avoir suggéré des modifications au contrôle de transporteurs à baggage. On installera maintenant à titre optionnel un dispositif d'arrêt automatique.



Regional managers (Administrative Services) had a chance to compare notes at a conference in Ottawa Sept. 23-27. Discussion centered on general administration. Other topics, such as liaison between the regions and headquarters, were also covered.

Lors d'une conférence tenue à Ottawa du 23 au 27 septembre 1974, les directeurs régionaux (Services Administratifs) ont pu échanger leurs points de vue. Les discutions ont porté sur l'administration en général; cependant, on y a débatu d'autres sujets, dont les communications entre les régions et le bureau central.

MINISTRY SCHOLARSHIPS - BOURSES DU MINISTÈRE

Scholarships worth $500 each have been awarded to six sons and daughters of Ministry of Transport employees.

The awards are made from a $62,500 fund created in 1963 from donations by transport employees to a group insurance plan that has been replaced by the government surgical medical insurance program.

Each year the Association of Universities and Colleges selects the first year university students who are to receive the scholarships.

Des bourses d'étude d'un montant de $500. ont été accordées à six bénéficiaires, fils ou filles d'employés du ministère des Transports.

Les bourses sont puisées à partir d'un fonds de $62 500. qui a été versé à cet effet, en 1963, à un conseil d'administration par des employés du Ministère qui payaient une cotisation à un régime d'assurance collective devenu désuet par l'introduction du régime d'assurance gouvernemental.

Cette année encore l'Association des universités et collèges canadiens a choisi les lauréats parmi les étudiants de première année.

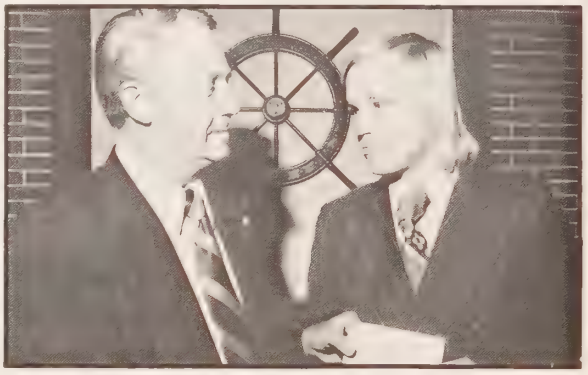
Gilles Morier of Macdonald College and Diane Brouilette of the University of Montreal receive awards from the Regional Administrator (Air) for Quebec, Pierre Arpin. Gilles is the son of Gus Morier, Supervisor of Air Traffic Control, Montreal International Airport. Diane is the daughter of Edouard Brouilette, an electrician at the Montreal Airport.

M. Gilles Morier du collège Macdonald, fils de M. G. Morier, surintendant au contrôle du trafic aérien à l'aéroport international de Montréal ainsi que Mlle Diane Brouilette de l'université de Montréal, fille de M. E. Brouilette, électricien à l'aéroport international de Montréal, ont reçu de M. Pierre Arpin, directeur de la région aérienne du Québec, leurs bourses d'étude du ministère.



Douglas Eastman, son of Arctic Agency Planning Officer R.A. Eastman, accepts his award at Kingston, Ont. The scholarship is presented to the Queen's University student by Mel Hagglund, Administrator, Arctic Transportation Agency, Ottawa.

M. Douglas Eastman reçoit sa bourse d'étude de M. Mel Hagglund, directeur à l'Agence des Transports dans l'Arctique (Ottawa). Douglas est le fils de R.A. Eastman, officier en planification à l'Agence des transports dans l'Arctique. Douglas étudie à l'université Queen's.



D.A. Lane, Regional Administrator, Central Region, presents award to Gail Archer, a student at the University of Winnipeg. J.D. Archer, Gail's father, is an electronics technician at Winnipeg.

M. D.A. Lane, directeur régional à l'Administration centrale, remet une bourse d'étude à Mlle Gail Archer. Gail est la fille de J.D. Archer, technicien en électronique à Winnipeg. Mlle Archer étudie à l'université de Winnipeg.



University of Alberta student Howard (Jim) Hoover receives his award from Don Dewar, Western Regional Administrator (Air). Howard's father, Joe Hoover, is Superintendent of Systems and Procedures, Air Traffic Services, Edmonton.

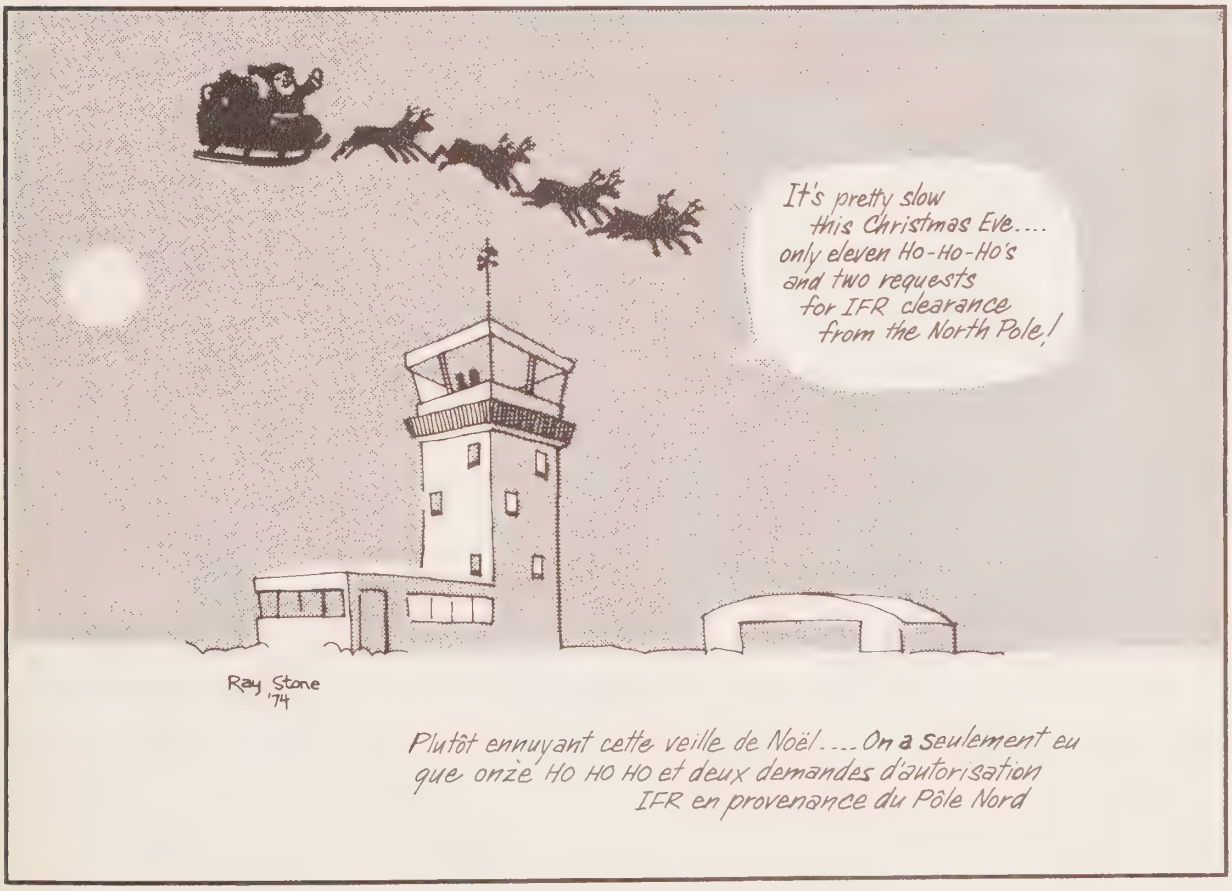
M. J.A. Hoover, spécialiste aux services aériens à Edmonton, apparaît ici en compagnie de son fils Howard, récipiendaire d'une bourse d'étude du ministère. Étudiant à l'université de l'Alberta, M. Hoover reçoit sa bourse des mains de M. Don Dewar, directeur de la région de l'Ouest (Air).



Faith Cormier, daughter of R.J. Cormier, Manager of Aircraft, Ground and Mobile Equipment Maintenance at Goose Bay, receives a scholarship award from Tom Prescott, Regional Administrator (Air), Atlantic Region. Faith is studying at the University of Moncton.

Mlle Faith Cormier reçoit une bourse d'étude de Tom Prescott, directeur régional, Administration de l'air, région de l'Atlantique. Faith étudie à l'université de Moncton. Elle est la fille de R.J. Cormier, gérant de la section des aéronefs, Entretien de l'équipement mobile et au sol, à Goose Bay.





Plutôt ennuyant cette veille de Noël.... On a seulement eu que onze HO HO HO et deux demandes d'autorisation IFR en provenance du Pôle Nord

TRANSPORT CANADA



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Cover Photo

Canadian Coast Guard *Voyageur,* air cushion vehicle, breaking ice on Lake St. Louis. The *Voyageur* is based at Montreal to assist in ice control and to gain further data on the vehicle's ice breaking capabilities.

Le *Voyageur,* véhicule à coussin d'air de la Garde côtière canadienne, brise la glace sur la lac Saint-Louis. Depuis son port d'attache à Montréal il complète le rôle des brise-glaces; on en profite par la même occasion pour évaluer ses qualités en ce domaine.

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CONTENTS/SOMMAIRE

MESSAGE 3

URBAN MASS TRANSIT 4

TRANSPORT MÉTROPOLITAIN 6

CROW'S NEST 9

LA GARDE COTIÈRE SOUS LES TROPIQUES 12

ICEBREAKER CAPTAIN IN THE TROPICS 15

SIGNALISATION 17

SIGNS OF THE TIME 19

AIRCRAFT ACCIDENT INVESTIGATION 20

AN MOT PERSONALITY 22

TRANSCAN SECTION 24

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Del Taylor


L.P. MacLean

When people ask me "Where does MOT belong?" I reply, "In the mainstream of Canadian life."

Transportation is an integral part of Canadian life. The issues MOT deals with are vital to the economy and to the well-being of Canadians.

Furthermore, MOT's orientation is evolving from treating the transportation components separately (ships, rail, air) to planning and coordination in terms of overall transport needs; from separate modes to intermodality.

Planning and coordination has always been an MOT preoccupation. Now its necessity is even more important. Transportation is becoming more dynamic and complex. We must contend with new influences that were just emerging in 1967 when the National Transportation Act was formulated.

We have, in the eight years since the Act, experienced the energy crisis, dramatically increased demand for natural resources, the use of large ocean-going bulk and container vessels, concern about pollution and disaffection with growth.

It's a whole new ball game. The stakes are higher, too. Our job is to unite the various parts of the transportation system, and anticipate and meet future needs. We must ensure that money spent on transportation is wisely spent.

The transportation system no longer has unlimited capacity. It is not sufficient to suggest putting on more cars to make up for a shortage of grain because the extra cars may not exist. Even if they did, the track may not have the capacity to handle them.

We also have to think of non-transportation alternatives.

There is talk of running Ontario hydro plants on coal from Alberta. To move the coal requires tremendous increases in capacity. Depending on the long range price of energy it may be cheaper to generate the electricity in Alberta and transmit it by high tension cable to Ontario, which is a non-transportation option.

Transportation is an instrument of political, social and economic purpose in Canada and MOT is charged with the responsibility for making sure the system works. To this end, we are assessing needs and developing a flexible planning process so we can anticipate future developments.

The major problems in transport occur where the different modes intersect — at ports, airports and bus terminals. The people in transportation centres, Vancouver, for example, are concerned about transport in general, not just trains or highways or harbours. In the same way, MOT is thinking in terms of combinations. The role of MOT is to provide the framework for integrating the plans of governments and the transportation industry.

Transportation is an exciting field to be in today. MOT is the very centre of the action.



J. W. Dalley

Lorsqu'on me demande "où se situe le ministère des Transports?", je réponds, "au coeur de l'évolution de la vie au Canada."

Le transport est une partie intégrante de la vie au Canada et les questions dont se préoccupe le ministère des Transports sont d'une importance vitale pour l'économie du pays et le bien-être de ses habitants.

Le Ministère oriente son action vers l'abandon d'une méthode consistant à envisager séparément les éléments constituants du transport, c'est-à-dire les navires, les chemins de fer et les avions. Il lui substitue plutôt une méthode de planification et de coordination établie en fonction des besoins d'ensemble du transport, c'est donc dire qu'il délaisse le système par mode séparé et opte pour le système intermodal.

Le ministère des Transports s'est toujours intéressé à la planification et à la coordination; cette préoccupation revêt plus d'importance du fait que les transports évoluent plus rapidement et que leur complexité augmente. Le Ministère est aux prises avec des questions qui ne faisaient qu'apparaître en 1967, lors de la promulgation de la Loi nationale sur les transports.

Au cours des huit années qui ont suivi la promulgation de la Loi, nous avons connu la crise des sources énergétiques, l'accroissement énorme des besoins en ressources naturelles, l'utilisation des navires de marchandises en vrac et des navires à conteneurs, de haute mer et à grandes dimensions, l'intérêt porté à la pollution et à la désaffection vis-à-vis l'expansion.

Le jeu est nouveau et ses mises plus élevées. Notre travail consiste à rassembler les différentes parties du système des transports, à prévoir ses besoins futurs et à y répondre. Nous devons veiller à ce que l'argent consacré aux transports soit utilisé le plus judicieusement possible.

Les possibilités du système des transports sont limitées. Il ne suffit plus d'ajouter des wagons pour acheminer le grain car, même si ceux-ci existaient, peut-être que le réseau de voies ferrées ne pourrait absorber un tel accroissement.

Nous devons également penser aux solutions qui éviteraient le recours à un mode de transport.

On envisage d'alimenter les usines hydrauliques de l'Ontario au charbon de l'Alberta. Comme le transport du charbon nécessiterait une augmentation énorme des possibilités du système, il serait peut-être plus économique, selon l'évolution à long terme du prix des sources énergétiques, de produire l'électricité en Alberta et de la transporter en Ontario par câbles à haute tension, ce qui représente une option ou l'on a recours à aucun moyen de transport.

Les principaux problèmes relatifs au transport se posent lorsque différents modes coexistent comme par exemple dans le cas des ports, des aéroports et des terminus d'autobus. Les responsables des centres de transport, comme celui de Vancouver, par exemple, s'intéressent au transport en général et non uniquement aux trains, aux autoroutes ou aux ports. De même, le ministère des Transports pense en termes de combinaisons. Son rôle consiste à poser les fondements d'une union entre les projets du gouvernement et ceux de l'industrie du transport.

Le transport est un instrument qui sert à des fins politiques, sociales et économiques au Canada et la tâche du ministère des Transports est de veiller à ce que le système fonctionne. Dans ce but, nous déterminons les besoins du transport et nous mettons au point un procédé de planification souple nous permettant de prévoir les progrès futurs.

Le monde du transport en est un des plus excitants et le ministère des Transports est au coeur même de l'action.

URBAN MASS TRANSIT

A CANADIAN SYSTEM FOR CANADIAN CITIES

BY PETER TWIDALE
EDITOR, TRANSPORT CANADA

MOT's Transport Development Agency (TDA) is campaigning for an all-Canadian urban transit system. The idea is to develop a Canadian design suitable for Halifax, Hamilton, Calgary and other centres of over 100,000 population.

At this stage TDA is talking about concept definition. It is too early for a prototype, or even detailed drawings.

The project is aimed at people in medium-sized Canadian cities, those in the 25 largest cities other than Montreal and Toronto (and in the suburbs of Montreal and Toronto). If plans develop as expected, in 10 years a light rail transit system will be carrying rush hour traffic in many of these centres.

The federal role, as seen by TDA, is to bring together design-expertise and development-funding, allowing the provinces and municipalities to build workable systems at reasonable cost. Thus the front line decisions belong to provincial and local governments; the federal government bringing everything together during basic design and prototype development.

TDA has contracted a Canadian-based consortium to determine Canada's needs in urban mass transit and to produce a basic system design, which will belong to the federal government. The next step will be to design and build a system. Possible approaches include a cooperative effort between Ottawa and several provinces, or eight to 10 cities combining to mass produce the components.

The design contract is no "Buck Rogers" exercise. The aim is to fill a real need in Canada for an intermediate capacity transit system (ICTS). The study is restricted to existing and emerging technology that will reduce cost and improve service. People expect frequent, reliable and comfortable transit service, and a modern ICTS can provide this at less cost than a bus system or subway. It is feasible with full automation to provide transit service at one to two minute intervals during rush hour, and five to ten at other times.

The designers are constrained only to the extent that the vehicle will be steel-wheeled, use rail lines, be electric and automated. The result will be small mass transit vehicles using rail tracks and having a capacity midway between buses and subways.

Bus systems have a limited passenger-carrying capability (in one direction 3,000-6,000 people per hour). As well, they add to noise, pollution and traffic congestion.

Subways are too costly. Only major cities have the demand to justify the expense.

Statistics on bus and subway systems show a big gap between the capacity of the two. To identify the gap is to identify the problem, according to TDA. The solution they're looking for amounts to finding the best way to fill the gap.

Neither the municipalities, the provinces nor the federal government alone have the full spectrum of resources required to develop a truly Canadian system. The federal role is to pull together the various talents in government and industry.

"Studies show there will be a heavy demand for rapid transit equipment in the next 10 to 15 years," says Ted Rudback, TDA engineer on the project. "If we want a Canadian system we can't afford to wait. Design and development is a long term process. We have to get



An Artist's Concept of Wheel-less Cabin Train.
Photo: D a D/Krauss-Maffei



The Aerobus, a 100-seater Swiss-built cablecar, is the latest addition to public transport in Mannheim, Federal Republic of Germany.
Photo: D a D/Bohnert and Neusch.

moving. The onus is on the Federal Government."

Ottawa will provide a means of sharing the development problems. Technology is becoming so complex that going into a new system requires cooperation among governments, industry and the people who use it.

No centre acting alone wants to take on the tremendous responsibility of developing the first Canadian system. No one wants to be stuck with the bugs and problems, Mr. Rudback notes.

"Our intention is to provide the funding to get the design through its initial teething stage. Once the first system is in, smoothed out and working, others can follow."

The design will by no means be restricted to mass transit technology. Urbanologists, as members of the team, will investigate the social aspects of the design. Planners will consult with the people who will eventually ride the system. One reason the system will rely heavily on existing rail tracks is public resistance to cutting great swaths through built-up areas.

The federal interest is to see that provincial and local governments can make the best decisions. Ottawa is in the unique position of being able to encourage participation and cooperation in design and development. This will be TDA's initiative.

"If we can put up the front money for design and development, and if the provincial and local planners who must implement the systems join in, together we can come up with a design suitable for a wide range of Canadian applications," says Mr. Rudback.

"Our concern now is to get ahead of the game. We should set plans before the situation forces us to accept the quickest alternative. The quickest solution is not always the optimum solution. If we don't take the time now to anticipate our needs we may find ourselves importing expertise and even equipment."

What is wrong with asking other countries for assistance?

"It means going along with solutions that aren't necessarily the best for Canada. A system that works perfectly in England or Venezuela is not going to work so well here because our situation is very different."

A case in point is Edmonton. No longer satisfied with buses, Edmonton is looking at rapid transit. They have started to construct a line and must soon order vehicles. As a result, Edmonton may have to go out of Canada. They may have to buy equipment in Europe.

Ten years ago, in quieter times before the energy and pollution crises, we took transportation for granted. We had the family car and that seemed to be all we needed.

There has been a change in attitudes, however, and people today can see the advantages of good public transit, according to Mr. Rudback, whose last job was designing an automated control system for the St. Lawrence Seaway.

A major concern for TDA is to see that municipalities use railway right-of-ways for mass transit, in cases where the railways are pulling out.

"Once you lose the right-of-ways, developers build on them and you can't re-establish them," says Mr. Rudback. "Five years ago they tore up a right-of-way on the south shore of Montreal. Now it's built over and the local people are just crying, because it follows exactly the route they want for a transit system."

"We're trying to make people aware of the value of existing facilities so they think twice before they tear them out."

The TDA concept definition is geared toward producing a prototype by 1980. The contract follows full consultation between TDA and the federal departments of Urban Affairs; Industry, Trade and Commerce; and Science and Technology as well as MOT's Surface Administration. There have also been discussions with provincial and municipal planners.

TRANSPORT MÉTROPOLITAIN

PAR PETER TWIDALE

Le Centre de développement des transports du MDT fait actuellement campagne en faveur d'un système de transport urbain totalement canadien. Il a l'intention de mettre au point un système canadien qui puisse être utilisé aussi bien à Halifax, Hamilton, Calgary, que dans les autres villes de plus de 100,000 habitants.

Le CDT n'en est encore qu'au stade de la définition du concept. Il est encore trop tôt pour un prototype ou même des dessins détaillés.

À part Montréal et Toronto, ce projet vise à desservir les habitants des villes canadiennes d'importance moyenne, soit les 25 plus grandes villes du pays dont les banlieues des métropoles. Si le projet fait les progrès escomptés, il y aura dans dix ans un système ferroviaire qui circulera durant les heures de pointe dans plusieurs des villes susmentionnées.

Le rôle de l'administration fédérale, tel que le voit le CDT, est de réunir les talents de conception et le financement nécessaire pour permettre aux provinces et aux municipalités de construire des systèmes adéquats à un prix raisonnable. Le gouvernement fédéral se contentera seulement de voir aux stades de la conception de base et de la mise au point du prototype, car les décisions effectives devront être prises par les gouvernements provinciaux et locaux.

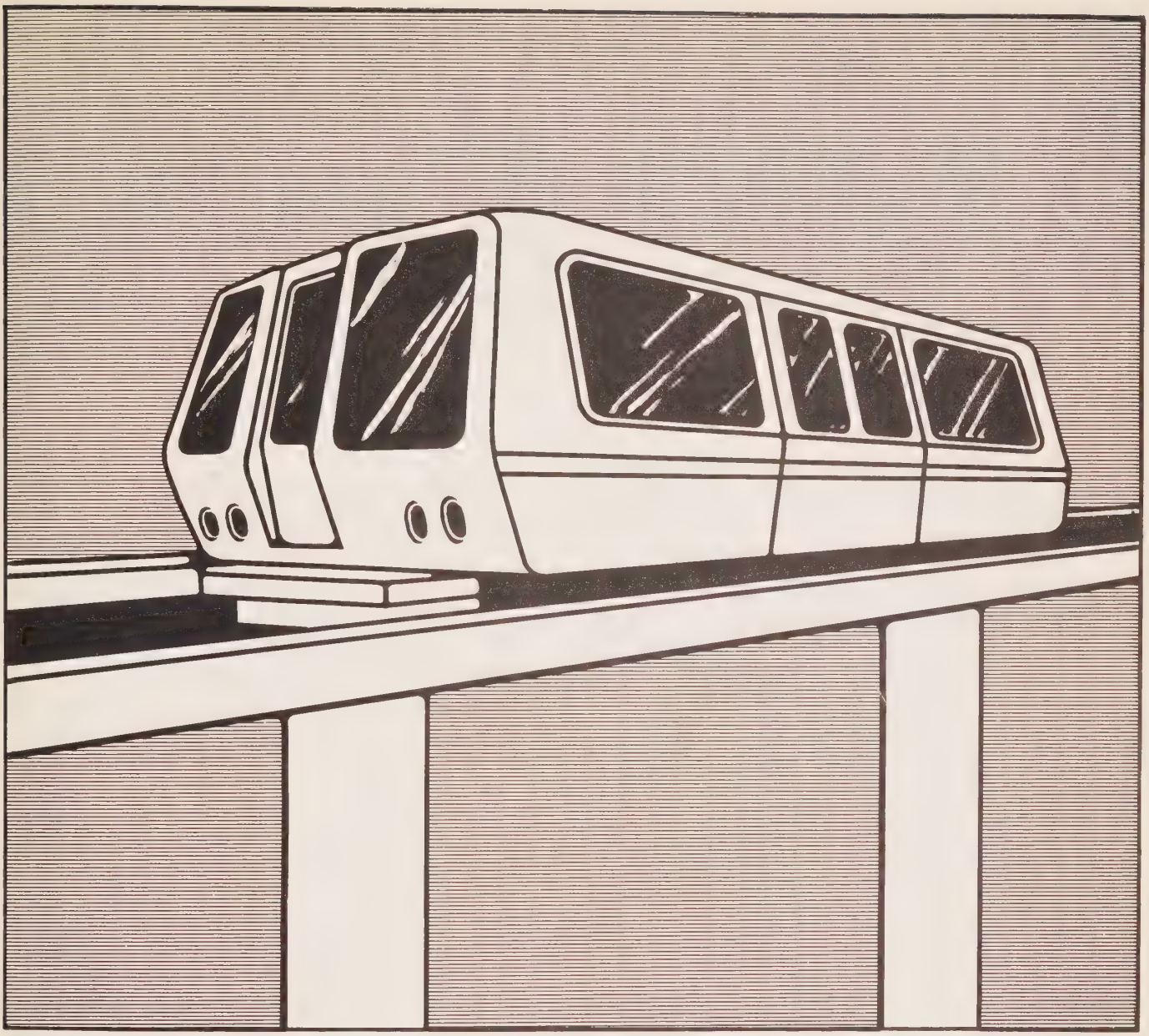
Le CDT va accorder un contrat à un consortium canadien qui devra déterminer les besoins canadiens en systèmes de transport urbain et créer un concept de base qui appartiendra au gouvernement fédéral. L'étape suivante sera celle de la conception et de la construction d'un système. Une méthode possible permettant de produire les résultats escomptés, est celle qui combine un effort de collaboration entre Ottawa et diverses provinces, ou tout au moins entre Ottawa et l'union de huit à dix municipalités.

Au niveau de la conception, le contrat prévoit quelque chose d'assez simple. Parce que l'objectif est de répondre à un besoin réel au Canada en vue d'un système de transport de capacité moyenne, l'étude se limite aux techniques existantes ou de pointe qui ont le pouvoir de diminuer les coûts et d'améliorer le service. Les voyageurs qui espèrent avoir un service fréquent, sûr et confortable peuvent espérer de telles qualités de ce système moderne de capacité moyenne, et ce à un coût inférieur à un système d'autobus ou de métro. Il est concevable, en supposant l'automatisation complète, de fournir un service à toutes les une ou deux minutes durant les heures de pointe, et à toutes les cinq ou dix minutes aux autres heures.

Les inventeurs devront simplement se rappeler que le véhicule doit avoir des roues d'acier, qu'il doit utiliser les lignes ferroviaires, et qu'il doit être électrique et automatique. Le résultat escompté est un petit véhicule de transport public qui utilise la voie ferrée et qui a une capacité intermédiaire entre l'autobus et le métro.

Les systèmes d'autobus ont une capacité-voyageurs limitée (de 3,000 à 6,000 personnes par heure dans un sens). En outre, ils ajoutent au bruit, à la pollution et aux embouteillages.

Les métros sont trop chers; seules les grandes villes ont les moyens et la demande qui en justifient le coût. Les chiffres révèlent qu'entre les systèmes d'autobus et de métro, il y a un très grand écart de capacité. Selon le CDT, le problème pourra être résolu quand nous au-



rons identifié cet écart, et que nous aurons trouvé les moyens de le combler.

Ni les municipalités, ni les provinces, ni le gouvernement fédéral seul jouissent de l'éventail des ressources nécessaires pour mettre au point un système uniquement canadien. Le rôle du gouvernement fédéral est de rassembler les divers talents que l'on trouve dans la fonction publique et le secteur industriel.

"Les études révèlent qu'il y aura une demande importante de transport rapide dans les 10 ou 15 prochaines années, disait Ted Rudback, ingénieur du CDT pour le projet. Si nous voulons un système canadien, nous ne pouvons plus attendre, car la conception et la mise au point constituent un long processus que nous devons entamer à l'instant. C'est le gouvernement fédéral qui doit prendre l'initiative".

Le gouvernement à Ottawa fournira les moyens de répartir les problèmes de développement. La technologie devient si complexe que la création d'un nouveau système exige la collaboration des gouvernements, de l'industrie et des usagers.

"Aucun groupe, agissant par lui-même, ne veut assumer l'énorme responsabilité de mettre au point le premier système canadien. Personne ne veut se retrouver seul aux prises avec les difficultés et les problèmes", a fait remarquer M. Rudback.

"Nous avons l'intention de fournir l'argent nécessaire pour en arriver à la conception initiale du système. Une fois le premier système créé, bien rodé et en usage, les autres suivront."

La conception ne se limitera pas à la technique elle-même du

transport urbain. Les urbanistes qui feront partie de l'équipe étudieront les répercussions sociales du concept. Les planificateurs consulteront les usagers éventuels du système. Une des raisons pour lesquelles le système fera grand usage des voies ferrées existantes est la résistance du public aux expropriations massives.

L'intérêt du fédéral est d'abord que les gouvernements provinciaux et locaux prennent les meilleures décisions. Ottawa se trouve dans la position unique de pouvoir encourager la participation et la collaboration à la conception et à la réalisation. C'est là le rôle du CDT.

"Si nous fournissons l'argent nécessaire à la conception et au développement, et si les planificateurs provinciaux et municipaux qui doivent mettre le système en pratique se rallient à nous, nous pouvons ensemble créer un système qui sera applicable à plusieurs endroits du Canada", dit M. Rudback.

"Dans l'immédiat, nous ne voulons pas être pris de court. Nous devons établir nos plans avant que les circonstances nous obligent à accepter la solution la plus rapide, ce genre de solution n'étant pas nécessairement la meilleure. Si nous ne prenons pas le temps maintenant de prévoir nos besoins, nous serons peut-être obligés d'importer les experts et même le matériel."

Et pourquoi serait-il mauvais d'adopter les solutions d'autres pays?

"Si le temps nous presse, nous serons obligés d'accepter des solutions qui ne sont pas nécessairement les meilleures pour le Canada. Un système parfaitement adapté à l'Angleterre ou au Venézuela ne fonctionnera pas aussi bien ici parce que nos conditions sont très différentes."

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Prenons l'exemple d'Edmonton. La ville n'est plus satisfaite du système d'autobus et cherche un système de transport rapide. Ils ont entrepris la construction d'une ligne et doivent bientôt commander leurs véhicules. En conséquence, Edmonton devra peut-être acheter son matériel en Europe.

Il y a dix ans, à une époque plus calme et avant la crise de l'énergie et les problèmes de pollution, les transports ne posaient pas de problème. Chaque famille avait sa voiture qui semblait répondre à tous ses besoins.

"Mais cette attitude a changé et la plupart des gens voient aujourd'hui les avantages d'un bon système de transport public," affirme M. Rudback, dont la dernière réalisation a été de concevoir un système de contrôle automatique pour la voie maritime du Saint-Laurent.

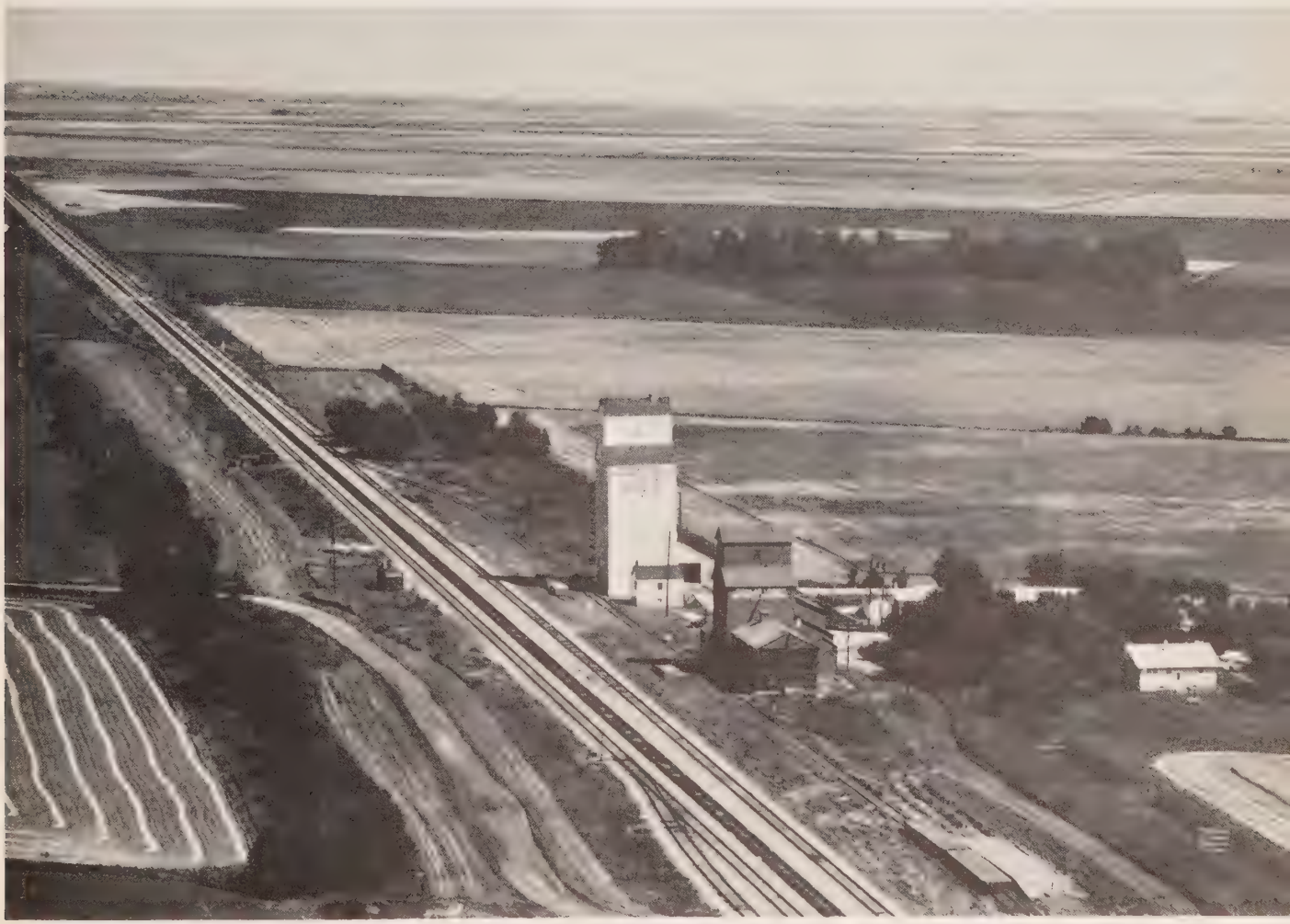
Le CDT porte beaucoup d'intérêt à l'idée que les municipalités doivent utiliser les lignes ferroviaires pour les transports publics, dans les cas ou les compagnies de chemins de fer les abandonneraient.

"Une fois que les lignes sont perdues, les constructeurs s'en servent et il devient impossible de les rétablir, dit M. Rudback. Il y a cinq ans, on a supprimé une ligne sur la rive sud de Montréal. À l'heure actuelle elle est occupée par des édifices et les habitants s'en plaignent parce que l'ancienne ligne représente exactement le parcours voulu pour le système de transport public."

"Nous tentons de rendre les gens conscients de la valeur des installations existantes pour qu'ils y pensent par deux fois avant de les supprimer."

Le CDT s'est donné jusqu'à 1980 pour créer un prototype. Le contrat fait suite à une consultation générale entre le CDT et les Ministères fédéraux des Affaires urbaines, de l'Industrie et du Commerce, de la Science et de la Technologie, ainsi qu'avec l'Administration des transports de surface du MDT. Il y a eu également des discussions avec les planificateurs provinciaux et municipaux.

CROW'S NEST



La Passe-du-Nid-de-Corbeau, c'est sur le parcours transcontinental du Canadien-Pacifique, mais c'est aussi une loi qui pendant des années a régi le transport du grain dans l'Ouest du Canada.

In the early 1890's the Canadian Pacific Railway wanted to put a line through the Rockies south of the existing Kicking Horse Pass route. The CPR's choice was a route through the Crow's Nest Pass, and Crow's Nest has since become a prominent name in Canadian transportation, politics, agriculture and export trade.

The proposed line, connecting Lethbridge, Alta. and Nelson, B.C., was designed to encourage settlement in Alberta and B.C., and also open up mineral resources in southern B.C.



In 1896 the Canadian government and the CPR entered into a contract, known as the Crow's Nest Pass Agreement. Each party made concessions to meet the requirments of the other.

The CPR needed financial help, and the federal government gave a subsidy of $3,400,000. The B.C. government handed over sizeable grants of land on which to build the line.

In return, Ottawa asked for concessions aimed to help develop prairie agricultural lands. This would be done by lowering CPR freight rates, and the railway agreed to do this in two ways.

The first change involved the movement of commodities known as "settlers effects" to the prairies from central Canada. In order to help farmers develop the land, the CPR agreed to reduce freight rates on such items as agricultural implements, horseshoes, coal oil and binder twine - commodities needed by homesteaders. The reductions varied from one-third on fresh fruit to 20 percent on coal oil and 10 percent on window glass.

The second change involved the shipment of grain and flour from the prairies to Fort William (now Thunder Bay), at the head of the Great Lakes. The CPR undertook to reduce rates by three cents per 100 pounds. The rates, which came fully into effect in 1899, varied across the prairies according to a complicated system of zones. At Brandon, Man., for example, the reduction on rates to Thunder Bay amounted to roughly 19 percent.

The Crow's Nest Agreement became law by an Act of Parliament, assented to July 29, 1897. It stipulated, concerning shipment of westbound commodities, "that no higher rates than such rates or tolls shall be hereafter charged by the Company." It said of eastbound grain that "no higher rates than such reduced rates or tolls shall be charged" after the CPR had brought rates to the agreed-to level in 1899.

Thus it would appear the Crow's Nest rates would be "hereafter ironclad". In actual fact the period 1899-1925 was one of flux, and the agreed-to rates were in effect for little more than seven years out of the 26.

In 1903 the CPR had to reduce Crow's Nest grain rates on lines linking Manitoba and Saskatchewan with Fort William in order to compete with a railway supported by the two provincial governments, the Canadian Northern Railway. In the Crow's Nest Agreement the CPR had benefited from a subsidy while competing railways had been forced to lower rates without a subsidy. This time it was the CPR that had to compete without help. The Manitoba government subsidized construction of the Canadian Northern and, by the Manitoba Agreement of 1903, set a level of reduced rates on grain shipment to Fort William from Manitoba and Saskatchewan that lasted for 15 years, until 1918.

In response to wartime inflation, the government by a 1918 Order in Council suspended the Crow's Nest Agreement and raised rates by close to 15 percent. In 1921, the government, responding to a brief recession, reduced the rates by 10-15 percent. In 1922 rates were returned to the 1899 level.

The period 1922-25 was marked by partial application of the rates by the CPR. It applied the reduced rates on lines that had been in existence in 1897, and the CNR matched the rates only at competitive points.

In the early 1920's the Panama Canal became a factor in Canadian freight rates. Prairie grain could now be shipped competitively out of west coast ports and via the canal to Europe.

B.C. and Alberta demanded the application of Crow's Nest rates to the shipment of wheat and flour through Vancouver and other west coast ports. The application was heard by the Board of Railway Commissioners which decided in 1922 not to make Crow's Nest rates a standard for other rates, and instead ordered an immediate 10 percent reduction of westbound grain rates.

A 1925 Act of Parliament amending the Railway Act ended the Crow's Nest Agreement as a con-

tract between the federal government and the CPR. In addition, the special westbound rates on "settlers effects" were discontinued, and the eastbound Crow's Nest rates on grain shipment were continued. The rates were made to apply to eastern grain shipment on all present and future railway lines. Soon after, the Board of Railway Commissioners applied rates at the Crow's Nest level to cover the movement of grain westbound for export.

The upshot of 26 years of flux, as put forward in the 1925 legislation, and further action by the Board of Transport Commissioners and by the railways, was a continuation of the Crow's Nest structure in four parts, applying to:

1) Grain and flour shipment from any point and on any railway line from west of Thunder Bay to Thunder Bay and Armstrong, Ont.
2) Shipment of export grain and flour from prairie points to Vancouver and Prince Rupert, B.C.
3) Shipment of export grain and flour to Churchill, Man.
4) Shipment of certain grain byproducts of the milling, brewing and distilling industries, and shipment of feed products.

The rates have remained unchanged for the last 50 years, although there have been minor changes in coverage. In 1961, for example, rapeseed was added by Act of Parliament to the list of commodities covered by the rates.

In sum, the freight rates named after the Crow's Nest Pass have remained unchanged for the last 50 years.







LA GARDE COTIÈRE SOUS LES TROPIQUES

PAR LE CAPITAINE P.R.M. TOOMEY
DU *"NORMAN MCLEOD ROGERS"*

Peu d'individus s'attendent à retrouver en Afrique tropicale, plus particulièrement à Dakar, capitale de la république du Sénégal, le capitaine d'un brise-glaces en mission pour le Gouvernement canadien. Cependant c'est ce qui m'est arrivé. Depuis mes débuts à la Garde côtière, il y a dix ans, cette affectation a été la plus extraordinaire et la plus intéressante de toutes. Un message radio a tout déclenché; on me demandait si j'étais intéressé à aller au Sénégal. Comme au moment de cet appel je brisais la glace dans le Saint-Laurent près de Valleyfield à bord du *J.E. BERNIER* et qu'il faisait très froid, l'idée des chaudes brises africaines m'a convaincu en moins de dix secondes.

Quelques jours plus tard on me relevait de mes fonctions de capitaine et j'allais à Ottawa pour une réunion d'information avec mon employeur provisoire, l'Agence canadienne du développement international (ACDI). Je suis ensuite passé chez moi, à Québec, pour prendre mes bagages et subir les injections nécessaires contre la fièvre jaune, la petite vérole et le choléra. Je suis arrêté à Montréal pour obtenir un visa sénégalais et prendre toutes les mesures nécessaires pour un voyage de ce genre.

Puisque la Garde côtière canadienne n'a pas d'uniforme tropical, vue le "rare" besoin de cet article dans l'exercice de nos fonctions, j'ai été plus ou moins forcé d'improviser en suivant les conseils du capitaine W. Stuart, directeur de la Garde côtière canadienne. Les vêtements les plus pratiques semblaient être le pantalon blanc, long et court, chaussures blanches, chemise blanche à manches courtes et épaulettes et, bien sûr, le képi habituel, recouvert d'une housse blanche. Mon épouse me suggère d'épingler un petit drapeau canadien de tissu à la poche, étant donné qu'il est plutôt difficile d'identifier l'uniforme comme canadien sauf pour les feuilles d'érable stylisées aux épaulettes. Elle avait absolument raison; ce petit drapeau m'a servi de talisman, me garantissant amitié et bonne entente. Je n'aurais jamais cru que notre drapeau fût aussi facilement reconnu de par le monde.

C'est par un vendredi de la mi-avril que je suis sorti du 747 climatisé d'Air France pour m'exposer à la chaleur et aux vents poussiéreux de l'aéroport Yof de Dakar. Depuis la colonisation française, la seule langue commune au pays est le français; il y a toutefois un grand nombre de langues indigènes. J'ai constaté que l'usage du français permet de communiquer avec tout le monde, quelque soit leur niveau social. Les seules personnes à utiliser l'anglais sont les touristes britanniques et américains et les membres bilingues du personnel de l'Ambassade canadienne. Le problème linguistique du Canada semble bien insignifiant comparé à celui de ce pays où tous les habitants doivent parler deux langues et la plupart trois.

Après avoir été installé par le Chargé d'affaires canadien dans le plus moderne des hôtels de Dakar, j'étais prêt à entreprendre ma mission. Je devais évaluer les possibilités d'aide canadienne dans la création et l'exploitation d'un service sénégalais de protection des pêcheries.



L'École polytechnique de Thiès: on peut voir l'édifice administratif et, à droite, le Théâtre avec le boabab, symbole du Sénégal.



Le navire de guerre sénégalais *SAINT-LOUIS*.

Le Sénégal a, dans ses eaux territoriales, l'une des pêcheries les plus riches du monde; les espèces prises vont du thon à la sardine et il existe une industrie de crevettes florissante au sud dans la Casamance. La pêche est la deuxième plus importante industrie du pays après les arachides. Comme bien d'autres pays côtiers, le Sénégal a des difficultés à réglementer la pêche effectuée par des navires étrangers dans ses eaux. Le Sénégal n'a qu'une marine de fortune et aucun service de protection des pêcheries.

Ma mission était de rencontrer des hauts fonctionnaires du gouvernement sénégalais, de faire l'inspection du matériel et des installations existantes et de proposer des recommandations quant à leur utilisation maximale. Je devais également conseiller l'ACDI sur la nature de l'aide canadienne susceptible d'être la plus utile et la plus efficace compte tenu des ressources humaines et physiques du pays. Ce travail m'a intéressé au plus haut point, et m'a permis de visiter des endroits qui m'étaient inconnus. Mon drapeau et mon uniforme m'ont assuré la courtoisie de tous, tant militaires que civils. Partout on m'accueillait avec le sourire. J'ai été fortement impressionné par le pays et le mode de vie ainsi que par la lutte qui y est menée pour une indépendance réelle. J'ai été à même de comprendre les difficultés que doivent surmonter les pays du tiers monde, difficultés à côté desquelles nos problèmes paraissent insignifiants.



Le climat de la côte sénégalaise est relativement chaud, sec et très venteux. L'air est poussiéreux, réduisant de façon appréciable la visibilité même en mer. Cette poussière vient du Sahara, qui avance inexorablement de la Mauritanie au nord en raison de la sécheresse prolongée des quatre dernières années.

À bord du vaisseau amiral sénégalais SAINT-LOUIS lequel est un patrouilleur motorisé de la classe CHERBOURG d'environ 140 pieds de longueur, j'ai fait un court voyage allant de Dakar à Siné-Saloum. J'ai pu voir la pêche en eau douce effectuée à bord de pirogues. Ce voyage a été très instructif, car je n'étais pas habitué à des navires aussi petits. J'ai vu les pirogues arriver au rivage à la fin d'une journée pour déposer leur prise tout le long de la plage à Kayar, un spectacle inchangé depuis des siècles. De nombreux Sénégalais s'affairaient autour des poissons empilés sur le sable, discutant des prix et emportant leurs achats, parfois encore vivants, en équilibre sur leurs têtes. La scène était insolite du fait de la présence de moteurs hors-bord (fournis par le Canada dans le cadre d'un autre programme de l'ACDI) fixés à chacune des pirogues qui, grâce à eux, glissaient facilement sur les vagues jusqu'au sable de la plage. Les marins sénégalais se sont montrés très intéressés par les brise-glaces. Cependant, parce qu'ils ne voyaient pas la nécessité de la navigation hivernale, il m'était difficile de répondre de façon satisfaisante à leurs questions.

Au cours de mes randonnées dans ce pays j'ai eu l'occasion de visiter Thiès à quelque 80 Km. (50 milles) de Dakar vers l'intérieur. Cette ville est le site d'une école polytechnique construite et exploitée par le Canada. Le parcours Dakar-Thiès m'a permis de constater l'avance du désert, les broussailles près de la côte faisant place graduellement aux broussailles sèches et finalement à un sol brûlé, nu, parsemé çà et là du symbole national du Sénégal, le Boabab, avec ses branches verticales et apparemment sans feuille. La température est passée de 85 degrés Fahrenheit près de la côte à presque 100 degrés à 60 Km. de là et nous n'étions qu'en avril; le miracle, c'est que certaines choses poussent quand même.

Situé à la limite de Thiès, le collège technique est un oasis de verdure avec ses parterres, ses lits de fleurs et son vaste campus; un village spécial a été construit pour le personnel, qui est pour la plupart de Montréal et de la région environnante. Les magnifiques installations pour l'enseignement de divers sujets techniques sont administrées par l'Armée sénégalaise.

Le seul autre siège d'éducation supérieur du pays est l'université de Dakar, qui dessert une autre partie de la population.

Après quinze jours de discussions et d'inspections, il me semblait avoir recueilli tous les renseignements possibles. C'est avec regret que j'ai dû me faire à l'idée de quitter ce pays au climat ensoleillé, l'excellente cuisine sénégalaise-française, l'atmosphère calme avec ses deux heures et demie de pause pour le dîner et la sieste, et l'esprit d'égalité raciale qui règne partout.

Je suis arrivé à Québec alors que le dernier pied carré de neige sale fondait sur la pelouse de mon domicile. J'ai ramené un peu de poussière jaune de Dakar dans mes bagages pour la mêler au sol de ma province adoptive. À l'avenir, où que j'irai pour briser les glaces, j'aurai toujours en tête la question que me posait le lieutenant Thiaw, capitaine du SAINT-LOUIS, à savoir pourquoi, avec tout l'espace non gelé de la terre, nous acharnons-nous à briser tout sur notre passage en des endroits aussi froids et hostiles et pour une si petite récompense?

Puisque le *QUADRA* a passé l'été de 1974 à Dakar dans le cadre d'une étude internationale météorologique, la Garde côtière canadienne doit être à l'heure actuelle bien connue dans la région. Si la Garde côtière a de plus en plus l'intention d'oeuvrer sur les sept mers, on devrait sérieusement songer à la doter d'un uniforme tropical convenable, auquel on pourrait coudre un petit drapeau canadien à la poche.

ICEBREAKER CAPTAIN IN THE TROPICS



BY CAPTAIN P.R.M. TOOMEY
C.C.G.S. *"NORMAN MCLEOD ROGERS"*

Not too many people would expect to find an icebreaker captain on a government mission to Dakar, the capital of the Republic of Senegal. But this was my assignment, certainly the most unusual, in my 10-year career with the Coast Guard. It was also the most unexpected, for I was engaged in breaking ice in the St. Lawrence Seaway when a radio telephone call came asking if I would be interested in making the trip. Aboard the CCGS *J.E. Bernier* it was bitterly cold and the thought of warm African breezes helped me quickly make up my mind.

Within a couple of days I was relieved as captain of the ship and whisked off to Ottawa for consultations and briefing by my temporary patron, the Canadian International Development Agency (CIDA for short). My next stop was Quebec to collect my gear and get the necessary shots for yellow fever, smallpox and cholera. Then on to Montreal where I obtained a visa to enter Senegal.

There is no tropical uniform specified for the Canadian Coast Guard – as we spend more time in cold climates than hot ones – so I had to invent one for myself within the guidelines explained to me by Capt. W.J.H. Stuart, Director of the Coast Guard. The appropriate attire seemed to consist of long or short white pants, white shoes, white uniform shirt with short sleeves and epaulettes, and the usual uniform cap (with white cap-cover, of course).

There was no way to identify the uniform as being Canadian, apart from the stylized maple leaves on the epaulettes that could easily escape notice. My wife suggested that a small, woven Canadian flag pinned to the breast of the shirt would help. She was absolutely right! The little flag worked like a talisman, guaranteeing friendship and goodwill wherever I went. I had not imagined that our flag was so instantly recognized around the world.

On a Friday in mid-April I stepped out of the air-conditioned Air France 747 into the heat and dusty wind of Dakar Yof Airport in Senegal. Although many native languages are spoken in this former French colony, I found that as long as I spoke French I could communicate with everyone. The only English I heard came from British and American tourists and members of the Canadian Embassy staff. If we think there is a language problem in Canada it is as nothing compared to a country like Senegal where everyone must have two if not three languages in order to lead their daily lives.

Once I was installed in the latest of the large hotels springing up in Dakar, I was ready to begin my mission, which was to assess the possibilities of Canadian aid in setting up and operating a Senegalese fishery protection service.

Senegal's territorial waters are one of the world's richest fisheries, the species ranging from tuna to sardines with a flourishing shrimp industry to the south. Second to peanuts, fishing is the most important industry in the country. As a coastal state, Senegal has a problem in regulating the fishing by foreign vessels in her waters. Senegal has only an embryonic navy and no fishery protection service.

My task was to consult with Senegalese Government officials, inspect equipment and facilities, and recommend how to use them to their full potential. Furthermore, I was to advise CIDA on how Canadian aid could be directed in the most useful and efficient manner. This task was extremely interesting and took me to places I would never have seen. My uniform and little flag worked like a charm in both military and civilian installations. I was treated with the utmost courtesy.

The climate of coastal Senegal is moderately hot, dry and always windy. The air is dusty, reducing visibility to a marked extent, even over the sea. Dust is carried from the Sahara Desert across neighbouring Mauretainia to the north. It was particularly bad when I was there due to a four-year drought.

I went for a short cruise with the Senegalese Navy on their flagship,



Two Captains on the Bridge of N.G.S. *ST. LOUIS.*



DeHavilland Twin-Otter aircraft of AIR SENEGAL, similar to those proposed for surveillance of the Fishing Zones offshore.

the NGS *St. Louis* which is a small Cherbourg-class motor-patrol boat about 140 ft. long. I could see the inshore fishery conducted from large dugout canoes called "pirogues." The voyage was an education for me, as I was used to larger vessels. It was also informative for the Senegalese Navy which wanted to hear all about icebreaking. They could not believe that winter navigation was really necessary. Their question as to why we do it was very difficult to answer convincingly.

On one occasion I witnessed the pirogues coming ashore at the end of the day to land their catch all along the beach at Kayar, a sight which must date back unchanged for hundreds of years, with the Senegalese crowding around piles of fish, haggling over the price, and bearing their purchases balanced on their heads, the fish flapping with life. The only incongruity in the scene was provided by the outboard motors on the pirogues (furnished by Canada on another CIDA project). But the outboards proved useful in driving the boats through the surf.

I visited a place called Thiés, some 80 Km. (50 miles) into the interior from Dakar. Canada built and operates a technical college at Thiés. The journey from Dakar shows how the desert is advancing, the greener bush near the coast gradually giving way to dry brush and eventually to baked earth with the ever-present national symbol of Senegal, the Baobab tree, punctuating the distance with upraised and apparently leafless branches. The temperature rose from 85° at the coast to almost 100° near Thiés, and that was in April. It is little wonder that everything dries up; the wonder is that anything grows at all.

The technical college is an oasis of green on the outskirts of Thiés, with neatly mown lawns, flower beds and a spacious campus. There is a self-contained village of houses for the staff, most of whom are from Montreal and vicinity. These excellent facilities for teaching various technical subjects are run by the Senegalese Army. The other major institution, the University of Dakar, serves a different segment of the population.

After 15 days of talks and inspections, I had gathered all the information I required. I was loath to leave the balmy climate, the excellent Senegalese/French cuisine, the unhurried atmosphere with 2 1/2 hours for lunch and a siesta, and the air of utter and complete racial equality.

I arrived home in Québec as the last square foot of blackened snow melted away from my front lawn. Some of the yellow dust from Dakar emptied from my suitcase and now mingles with Canadian soil. As I continue my career of icebreaking I shall never forget the question posed by Lieut. Thiaw, captain of the *St. Louis*. "With so many warm water oceans to sail on, why do you persist in smashing about in the cold and ice for such a small return."

Since the CCGS *Quadra* spent the summer of 1974 operating out of Dakar on an international study of weather, the Canadian Coast Guard should now be well known in the region. I wonder what uniform they wore? If the Canadian Coast Guard is going to continue to appear upon the seven seas, they need a proper tropical uniform. I would suggest a woven Canadian flag on the pocket!

SIGNALISATION

Prendre l'avion, la limousine, un taxi, c'est se faire conduire. Se véhiculer dans une aérogare, c'est se conduire soi-même. L'aérogare est une étape du transport où le passager doit s'orienter par ses propres moyens.

Le premier souci de tout voyageur, comité de réception ou d'adieu, est de faire son chemin vers un lieu précis. Pour faciliter la tâche au public usager, le ministère des Transports a élaboré des indications directionnelles spéciales.

Le ministère des Transports a cerné une cinquantaine d'installations ou d'activités d'importance dans une aérogare. La signalisation ou les panneaux pictographiques sont conçus et situés de façon à attirer l'attention vers ces activités ou installations.

Naturellement, 50 panneaux de signalisation détaillés, écrits dans les deux langues et disposés à tous les 50 pieds ne réussiraient qu'à créer la confusion. C'est pourquoi, un "langage de signalisation" a été développé au cours des dernières années et le mot écrit a fait place aux dessins et aux symboles.

On doit la création de certains panneaux pictographiques, tels que ceux indiquant les douanes, au MDT. Les autres ont été adaptés pour les transports à partir de symboles existants, comme par exemple, celui montrant une personne dans une chaise roulante. Un panneau en particulier, POLICE, utilise encore l'alphabet. Même s'il s'agit d'un mot, c'est en fait un symbole international.

En général, les panneaux de signalisation correspondent à l'usage international, même si les organismes mondiaux doivent encore établir une formule commune. Par exemple, il n'y a pas de plan commun aux États-Unis, où les aérogares appartiennent aux municipalités et aux compagnies aériennes. Cependant, aux 85 aéroports du Canada, la signalisation est la même ou est sur le point d'être uniformisée.

On explique l'importance accordée aux panneaux pictographiques par ses qualités d'ordre et d'économie. Quelque soit l'origine des usagers, ils doivent pouvoir trouver leur destination, sans pour cela que les murs des aérogares soient tapissés de messages.

De plus, le panneau de signalisation doit fournir une identification immédiate. Les aérogares accueillent dès milliers de personnes. C'est pourquoi, peu importe la langue des gens, ou encore s'ils sont illetrés, les panneaux de signalisation doivent être compris.

La valeur informative des panneaux de signalisation a été le souci de Mme Erika Meysick-Fracke de la Direction des installations. Elle a participé à toutes les étapes de ce plan d'ensemble depuis l'atelier de conception originale jusqu'à grimper elle-même dans une échelle à l'aérogare no II de Toronto, pour fixer un panneau pictographique. Conseillère en architecture, Mme Meysick-Fracke a modifié et a amélioré la signalisation dans plusieurs aéroports; elle affirme qu'une fois le panneau pictographique identifié, les gens ne l'oublient plus. En d'autres mots, si le panneau leur dit quelque chose, ils n'ont plus qu'à promener leur regard jusqu'à ce que celui-ci leur apparaisse.

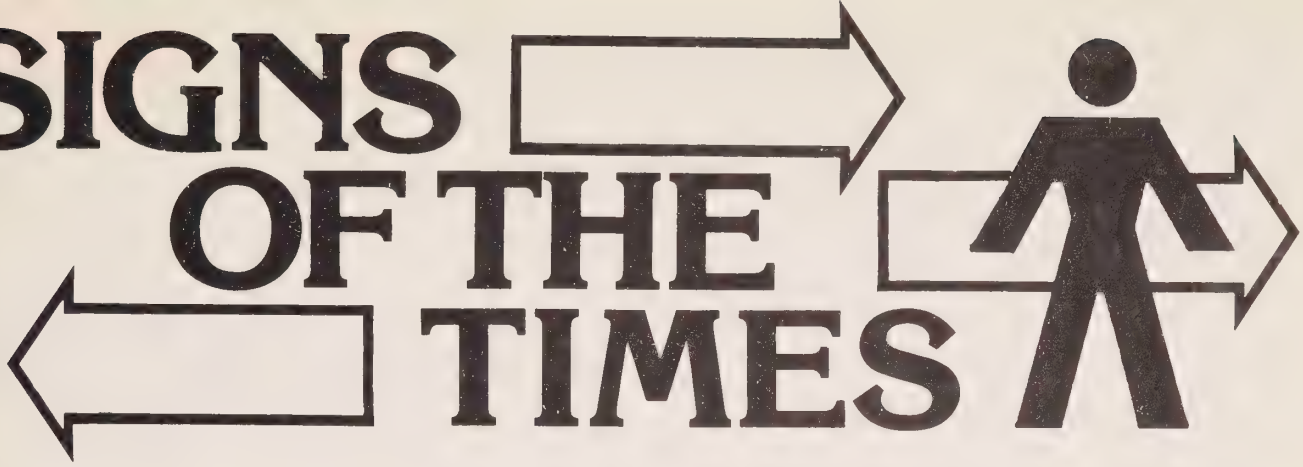
Le panneau pictographique élimine aussi le problème du bilinguisme et plus n'est besoin de doubler le message. Le langage de la signalisation est un langage international.

Mme Meysick-Fracke fait remarquer également que les panneaux pictographiques peuvent être vus de loin. "Les panneaux écrits doivent être répétés à tous les 50 pieds. Les panneaux pictographiques peuvent être identifiés jusqu'à quatre fois cette distance".

Ainsi la prochaine fois que vous pénétrerez dans une aérogare, peut-être un peu fatigué et probablement en retard, vous pourrez compter sur les indicateurs pictographiques pour vous aider à vous rendre rapidement à destination.


NO SMOKING
DEFENSE DE FUMER
PROHIBITO FUMAR
NON FUMARE
RAUCHEN VERBOTEN
禁煙
TAXI
EXPORT A

SIGNS OF THE TIMES



Someone else is in charge when a passenger is riding in a plane, a taxi or airport bus, but once he's in the terminal he's on his own. The air terminal is one staging area in the transportation process where the passenger decides for himself.

Most passengers, as well as greeters and well-wishers, enter a terminal looking for answers. They want to get somewhere and their antennae are out to pick up directional signals.

The signals are found in MOT signs. MOT has discovered there are basically 50 things to do and places to go in a big terminal and the signs – or pictographs – are specifically designed and located to draw attention to these facilities.

Of course, 50 signs written out in detail in English and French and other languages and plastered around an air terminal would only confuse. Thus the "sign language" has been refined over recent years from written messages to detailed drawings to basic symbols.

Some of the pictographs, such as that indicating inspection services for international travellers, are MOT-originated. Others are existing symbols adapted to fit the style of the MOT family. The pictograph showing a person in a wheelchair is an example of this type. One sign – POLICE – still clings to the alphabet. Although a word, it is really an international symbol.

Generally, the signs comply with international usage, although world bodies through ICAO have still to come up with a common formula. There is no uniform system in the U.S., for example, where terminals are owned by municipalities and airlines. But in 85 of the federally owned and operated airports the signs are the same, or are being adopted.

Why all this about pictographs? Well, there has to be efficiency in the system. People of all ages and backgrounds must be able to find out where to go. At the same time terminals should not be wallpapered with messages.

Furthermore, signs must provide instant recognition. Airport terminals are designed to handle people on the move. Thus, no matter what people's tongue, or indeed in those rare cases of illiterate people, the signs must still be quick and accurate guideposts.

The information-value of the signs has been the preoccupation of Erika Meysick-Fracke of the Facilities Branch. She has worked on the system through all its stages, from original design to climbing a ladder in Toronto's Terminal II to slot in a pictograph. Mrs. Meysick-Fracke, an architectural designer, has been modifying and upgrading the signs at many airports, and says once people recognize a pictograph they never forget it. In other words, if it rings a bell for them, all they need to do in the future is scan until the sign pops up again.

Another advantage of pictographs is that they obviate the need for verbiage and the need for duplication. Sign language is an international language.

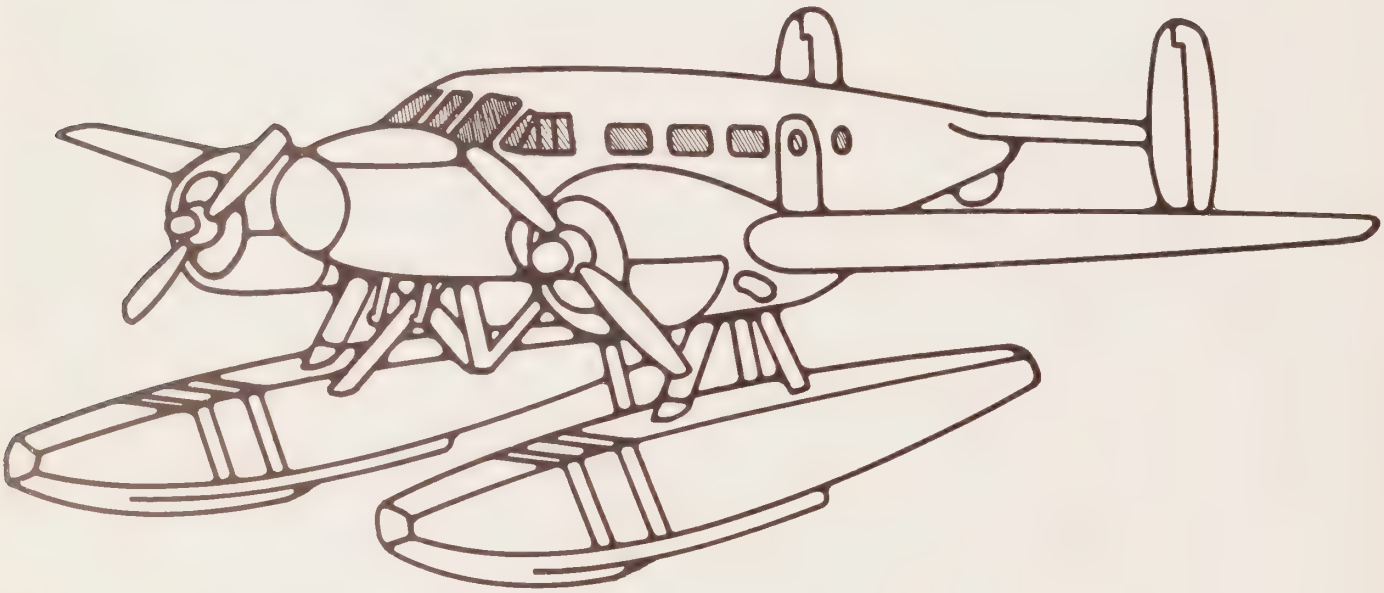
Because pictographs are larger than lettering in scale, they can be seen from far off, Mrs. Meysick-Fracke notes. "Word signs must be repeated every 50 feet. Pictographs can be read for four times that distance."

So the next time you peel out of a taxi at a strange airport feeling a little tired and probably behind schedule, and you scan and latch onto a pictograph, remember you're using a communication system as good as you'll find anywhere.

The evolution of the "language" has been toward simplicity and easy recognition. What next? One possibility is symbols. Instead of showing the essence of a facility, such as scissors for a barber shop, symbols represent a learned code. The highway stop sign comprises the word "STOP" set in a red octangle. Take out the word and the octangle alone becomes a symbol. People associate the shape and colour with stop.

AIRCRAFT ACCIDENT INVESTIGATION

BY DAVE AUSTIN
REGIONAL PUBLIC AFFAIRS OFFICER
CENTRAL REGION



Un article de Dave Austin des Affaires publiques de la région du Centre, qui nous entretient des enquêtes sur les tragédies aériennes et des conséquences qui en découlent.

Up to his waist in bog, forced to break newly formed ice with his hands as he moved step by step, Ministry of Transport Aircraft Accident Investigator Harold Doupe knew the answer he was seeking lay somewhere in the strewn wreckage of an aircraft in an isolated Northern Manitoba muskeg.

And that answer — that one small piece of evidence — would ultimately lead to swift action and modifications to aircraft ensuring that they would be safer. The accident that Mr. Doupe was investigating had resulted in one fatality.

The aircraft was and still is a popular twin-engined former military plane. With modifications, it can carry up to 11 passengers. Hundreds are in use over North America, and this was the second fatal crash of that type which Harold Doupe and other investigators from the Air Administration's Central Region had investigated in 1974.

Witnesses to the crash, north of Thompson, had described rather confusing gyrations of the aircraft just before the plane hit the earth, and this convinced Investigator Doupe that a wing held the answer to the crash. An MOT directive at the time ordered all older aircraft of this type be X-rayed regularly to check for metal fatigue in the wing. One of the first problems then was to find the wings in the three feet of muskeg.

Using block and tackle rigs attached to nearby trees the MOT investigators started to hoist pieces of wreckage. They did not know which wing was involved and where on the wing metal fatigue may have occurred.

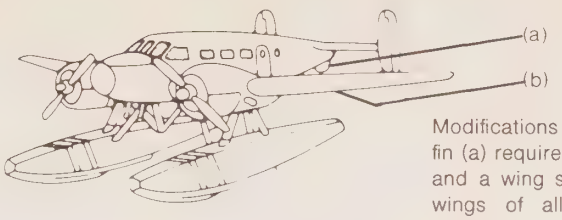
After four days of hard slugging on the bog they found the left wing and used a helicopter to ferry it to the airport in Thompson, where the job of dismantling the wing began. Soon they uncovered and removed a failed portion of the wing main spar which might to the untrained eye appear to have been cut by a saw. But the MOT investigating team knew they had the answer in their hands — metal fatigue.

The wing spar was sent to the Division's Engineering Laboratories in Ottawa, which confirmed that the wing spar had been fatigue/fractured.

The results of the Thompson investigation prompted the Director of Civil Aviation to issue an Airworthiness Directive for all aircraft of this type to have wing spar reinforcements affixed, and older aircraft to have the modifications made as early as possible.

This was not the first modification to this type of aircraft that had resulted from an investigation by Central Region teams. A previous fatal crash near Red Lake, Ont. indicated that such aircraft equipped with floats were not safe unless a dorsal fin was secured to the underside of the aircraft. Many owners had chosen to ignore previous MOT warnings about the fin and removed them or didn't equip their planes with them. As a result of the Red Lake incident, which killed the plane's pilot, it is now mandatory and strictly enforced by MOT Airworthiness and Air Regulations personnel across Canada that all float-equipped aircraft of this type be equipped with a dorsal fin.

So the aircraft looks different today than when it first rolled off the assembly line. But these particular modifications are safety essentials and a result of hours of investigation by Aircraft Accident Investigators whose primary role is to ensure safer aircraft through diligent research of those that fail.



Modifications to this aircraft include a dorsal fin (a) required for all float-equipped planes and a wing spar reinforcement (b) on the wings of all models of this particular aircraft.

The crash of an aircraft near Thompson, Man., confirmed that metal fatigue in the wing spars was a factor leading to this accident which killed the pilot.



Ministry of Transport Aircraft Accident Investigators determined that the lack of a dorsal fin on the underside of the aircraft was a factor in the plane crash near Red Lake, Ont.



AN MOT PERSONALITY

ERNIE FUNSTON THE QUIET SPOKEN ORGANIZER AT GOOSE BAY.

Ernie Funston récent récipiendaire d'une prime à l'initiative est au service du ministère des Transports à Goose Bay. Il représente bien le genre d'employé au service du ministère dans le Nord.

Garfield Flowers, of Eskimo and white origin, was born and raised at Hopedale, a village of 200 on the coast of Labrador. When he was 21 he landed a part-time job — 20 hours a week — maintaining the diesel engines at MOT's Hopedale weather station. He also trained on his own to become a weatherman. He'd sit in with the operator on the midnight shift.

In 1969 MOT announced plans to hand over the five-man station to private contract. Mr. Flowers' job was threatened, as were the plans for Ernie Funston, Telecommunications Manager for Labrador, to qualify the young man for a career.

Fortunately, Mr. Funston can handle tough situations. He decided that local people should bid on the contract. He knew that Labradorians, accustomed to long winters and isolation, made good long-term employees.

Mr. Funston helped Mr. Flowers enrol in an MOT weather course, which he passed successfully. He then helped the young Labradorian put in a bid for the weather station contract. Garfield Flowers won! He's running the weather station today. Four local people work for him, two of whom are Eskimo.

This is one of the many incidents for which Mr. Funston won a government Merit Award. The $550 award, presented last September, reflects his commitment to Labrador and Labradorians. It notes his ability to "work on his own solving problems unique to the region."

Mr. Funston, 55, is a super organizer inside and outside of his job. He's been with MOT at Goose Bay for 17 years as radio operator, telecommunications technician and manager.

"The schools are getting better these days, and more local people are qualifying for government jobs. Five of my technicians are native Labradorians, as are several Met officers on contract to DOE," Mr. Funston says. "But up to five years ago outsiders were getting all the skilled jobs. The Labradorians couldn't meet entrance standards, especially in mathematics. There was a psychological barrier, too. They believed they couldn't compete with employees brought in from St. John's, Moncton or Montreal. The turning point for me was the Garfield Flowers incident."

Several years ago, when a promising young Labradorian needed a cram course in reading and writing in order to qualify for a job at a remote Loran station, Mr. Funston invited him 200 miles to his home at Goose Bay, and had him enrolled in a school and along with his wife, Betty, coached him in the evenings.

Mr. Funston used to call on schools to talk with students about MOT. Bill Rompkey, M.P. for Grand Falls-White Bay, Labrador was supervisor of the Northwest School near Goose Bay in 1966-67 and many times he and Mr. Funston got together to help students try for MOT jobs.

"He's not just a Transport employee. He's a highly respected member of the community," notes Mr. Rompkey, who went through Toastmaster's with Ernie Funston. "Ernie's essentially a modest guy, but he always gets the job done."

Mr. Funston sharpened his skills as a manager in earlier years when communication was limited between Labrador and Moncton headquarters. In those days, as Terry Ryan, Mr. Funston's superior and Regional Superintendent for the Atlantic Provinces, explains there was less opportunity to call up Moncton for guidance.

Mr. Funston had lost an arm in an RCAF crash in 1943 in North Africa.



Telecommunications Equipment Room – MOT and liaison DND personnel – Goose Bay, Labrador

Ernie Funston – the Telecommunications Area Manager, 1975



Ernie Funston – the young radio operator in Goose Bay, 1946



Mr. Ryan chuckles when he tells the story of two MOT employees whose car became stuck in the snow bank down the street from the Funston's house, and opposite the home of another MOT employee, Doug Ritcey. The conversation beside the car went something like this:

"Let's get Doug to help us."

"No, we can't bother Doug. He's got a broken arm."

"Then we'd better head over and get Ernie."

"That sounds better."

Says Mr. Ryan, "Ernie is so self reliant that everyone forgets he has a disability."

Mr. Funston, an RCAF radio operator-gunner, enrolled at the Radio College of Canada in Toronto after his discharge. He recalls that the Radio College provided the first big challenge since the accident. The head of the college called Mr. Funston to his office one day and told him he'd never make it as a radio operator.

"I told him, 'You look after the school and I'll look after my career.' It was no concern of his whether I could handle the job," Mr. Funston recalls huffily.

In 1948 he was promoted to shift supervisor. Meantime he was studying on his own to qualify as an electronics technician, which became his occupation from 1952-57. In later years he moved into management, as Telecom Station Manager at Goose Bay 1958-64, and Area Manager for Labrador, his present job.

In 17 years, with MOT at Goose Bay, Mr. Funston has always been busy organizing. If it's not selling MOT to the community, then it's starting up a golf course, a social club, a union. He was on the executive of the first association of radio operators in the late 1940's, a quasi union connected with the Commercial Telegraphers Union.

"I'm on the other side now," Mr. Funston notes, "but I value my experience in the association. I can recognize mistakes easier."

TRANSCAN mini-reportages

MINISTRY LEADS IN MAIL ROOM DEVELOPMENT

Many Ministry employees will remember the old mail rooms in Number 3 and the Hunter Building and how inadequate they were for efficient and economical operation.

With the move to Tower "C" (now Transport Canada Building) a project was initiated to modernize central mail operations. The layout and furnishings were planned and developed under the guidance of the Chief Records Manager, J.E. St. Arnaud, assisted by the Mail Manager, Carroll Duquette and other members of the Records Management Division, Management Services and outside consultants, to provide modern facilities and institute efficient work flow. Today the Ministry has a Mailroom which can efficiently process over 5 — 6 million items of mail received annually (1,100 tons).

Already a variety of government agencies and outside firms have sent representatives to see the planned operations and many are adopting the ideas and work flow for their own operations.

Shown below are pictures of the outgoing, incoming, mail classification and internal distribution areas.

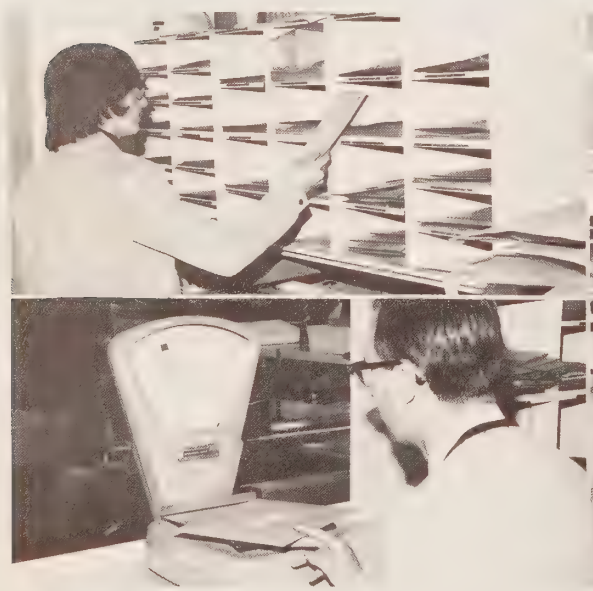
SALLE DU COURRIER DU MDT À L'HONNEUR

Nombreux sont les employés qui se souviennent de la salle du courrier du ministère des Transports alors que son siège était dans l'Édifice #3 et par la suite dans l'Immeuble Hunter. On se rappelle qu'elle n'était guère adéquate à un travail efficace et économique.

Depuis que nous sommes à l'Immeuble Transports Canada, c'est tout a fait différent! On a procédé à une modernisation radicale du service. Les changements de méthodes et de matériel se sont opérés sous la direction de M. J.E. St-Arnaud, chef à la Gestion des documents, assisté de M. C. Duquette, gérant du Centre de transit et de la salle d'acheminement du courrier, d'autres membres de la Gestion des documents, ainsi que de conseillers de l'extérieur. Aujourd'hui la salle du courrier manipule annuellement de cinq à six millions d'articles, soit plus de 1100 tonnes de matériel destiné à la distribution.

Quantité d'agences gouvernementales et de firmes ont délégué des représentants afin de se familiariser avec les méthodes utilisées et nombreux sont ceux qui une fois de retour dans leur milieu de travail les ont mises en pratique.

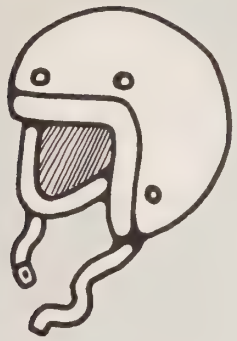
Les photographies ci-bas nous font voir quelques-unes des tâches de notre service de courrier.



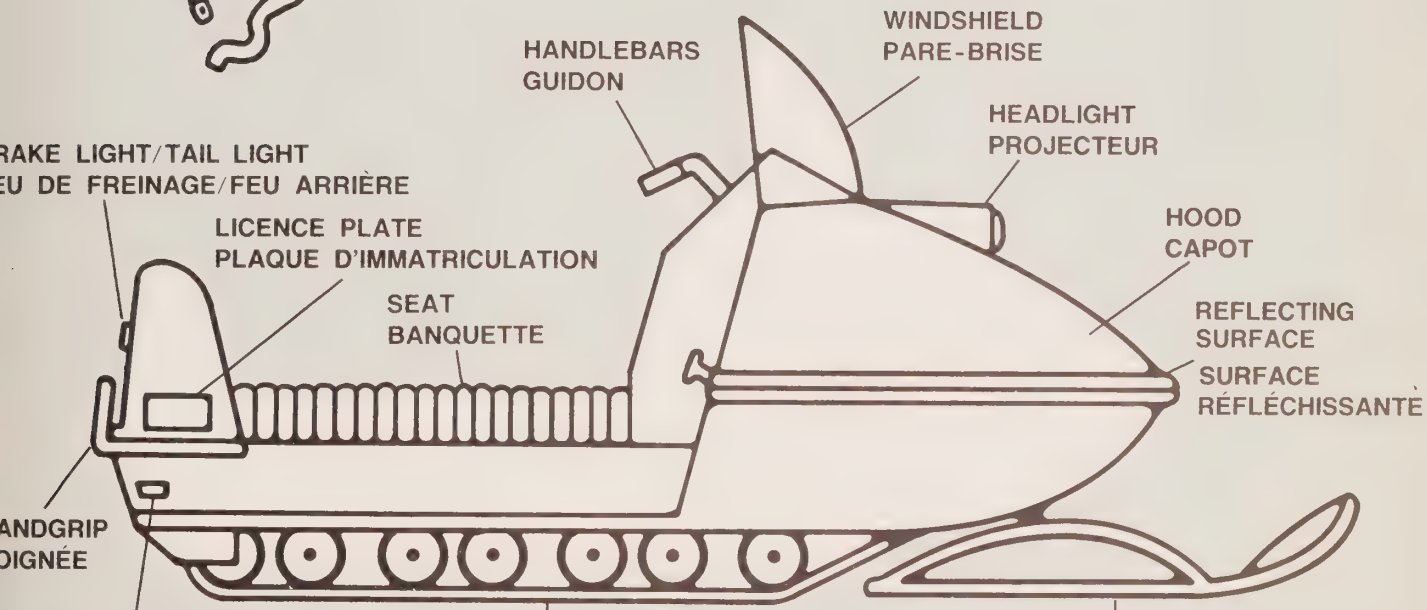


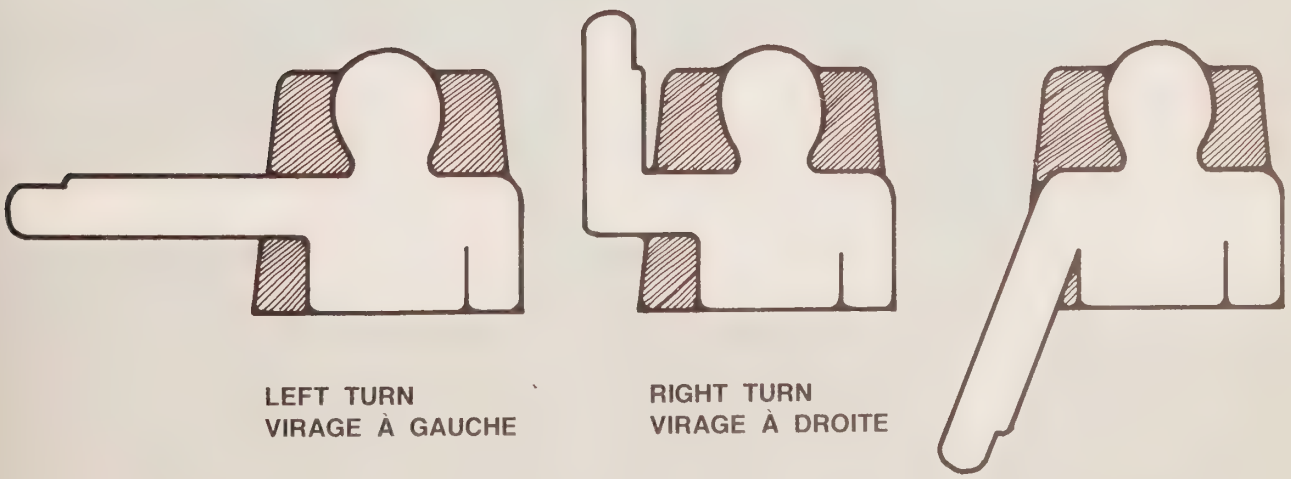
pour vous and me

SNOWMOBILING/EN MOTONEIGE



HELMUT
CASQUE PROTECTEUR



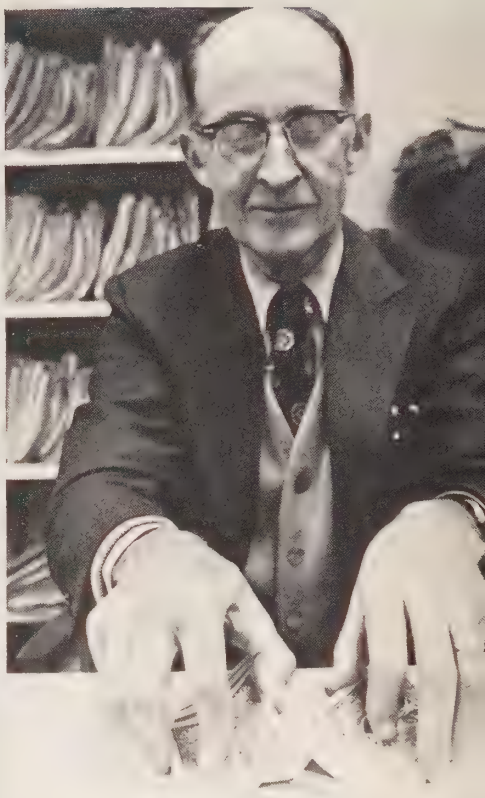


LEFT TURN
VIRAGE À GAUCHE

RIGHT TURN
VIRAGE À DROITE

STOP/SLOW DOWN
ARRÊT/DIMINUTION DE VITESSE

retirements
retraites



Some people are hard to classify. But not Reg McLewin. He's a facts and figures man. His church put him in charge of the collection. The MOT bowling league made him statistician. He kept records for the United Way, and when he offered to distribute clothes for the St. Vincent de Paul Society they made him banker.

Mr. McLewin retired in October after 25 years with MOT in Ottawa. His last job was in records. An early assignment he remembers fondly was computing the tolls on radio messages.

It's not surprising that Mr. McLewin's hobby is cards. This is the eighth season he's organized Friday night euchre parties for senior citizens. He plays cards himself Monday nights in a city league. He played cards during his lunch hour, first in the Hunter Building, and later in the filing room under the Holiday Inn. He continues to drop in for a few hands, as shown in the photograph.

Si d'une part il y a des individus difficiles à repérer, d'autres par contre sont immédiatement reconnus. Reg McLewin est l'un de ces derniers. À son église il s'occupe de la quête, dans la ligue de bowling du ministère des Transports il est statisticien, à la Fédération des oeuvres il s'occupe de la tenue des livres, et il agit en tant que banquier à la société de Saint-Vincent-de-Paul.

M. McLewin a pris sa retraite en octobre dernier après 25 ans de service au ministère des Transports. Il travaillait à la gestion des documents et auparavant il était aux messages radio.

M. McLewin est un amateur de carte, aussi à l'heure du dîner, n'était-il pas surprenant de le voir sortir son jeu, prêt à engager une bonne partie. Il en était ainsi depuis que le ministère avait son siège dans l'immeuble Hunter. Chaque vendredi et ce depuis huit ans il organise des parties de carte pour les citoyens de l'ge d'Or, et lui-même chaque lundi joue dans une ligue municipale. Vous le voyez à l'oeuvre sur la photographie ci-haut.

Harry Trice (left) Regional Building Mechanical Supervisor in the Central Region retired after 37 years of public service. Roger Walker, Manager of Airports for the region, presented a certificate of appreciation at a party held in Mr. Trice's honour.

M. Harry Trice, Surintendant à la mécanique, Immeubles régionaux, région du Centre, a pris sa retraite après 37 ans de service à la fonction publique. M. Roger Walker, gérant régional aux aéroports, a remis un certificat d'appréciation à M. Trice, lors d'une soirée tenue en son honneur.





G.S. "Dig" Bowness (left), Telecommunications Area Manager, T & E Branch, Sept-Iles, retired after 32 years with MOT. Gustave Blouin, MP for Manicouagan, spoke at the farewell party. At right is Mr. Bowness.

M. G.S. "Dig" Bowness, (à droite), gérant des Télécommunications, Service des télécommunications et de l'électronique à l'aéroport de Sept-Iles, prend sa retraite après 32 ans de service. Le député de Manicouagan, M. Gustave Blouin, a pris la parole lors de la réunion tenue en l'honneur de M. Bowness.



When Jack Smyth joined DOT in 1939 at Kenora Airport he was introduced on the first day to a young radio operator, Jerry Lomenda. Thirty-five years later at Winnipeg they both retired from MOT on the same day. Mr. Lomenda (left) was Central Region Operations Supervisor, Telecommunications and Electronics Branch (Air). Mr. Smyth was Airport Manager, Winnipeg International Airport.

En 1939, à l'aéroport de Kenora Ont., lors de leur premier jour de travail, deux nouveaux employés ont été présentés l'un à l'autre. En 1974 le même jour, Jack Smyth et Jerry Lomenda étaient de nouveau réunis à Winnipeg lors de leur retraite. M. Lomenda (à gauche) était surintendant régional des opérations (Centre) à la direction des Télécommunications et de l'Électronique, et M. Smyth était gérant de l'aéroport international de Winnipeg.



Ed Tallman (right) retired after 35 years with MOT at the Swift Current Airport. Desmond Carty, Regional Manger, T & E, presented a plaque. Mr. Tallman didn't use a single day of sick leave in the last 14 years.

M. Desmond Carty, administrateur régional aux T. & É. a remis à M. Ed Tallman une plaque soulignant ses 35 ans de service au ministère des Transports, à l'aéroport de Swift Current (Saskatchewan). Ed n'a jamais eu besoin de prendre un jour de congé-maladie au cours de ses 14 dernières années.



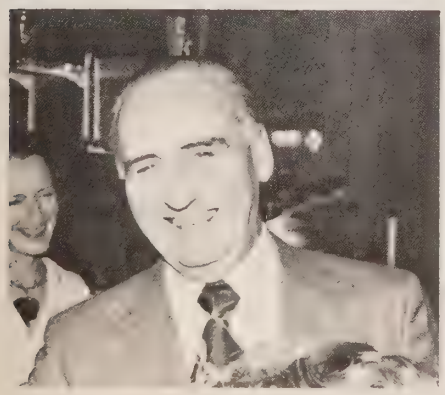
W.J.G. "Jim" Strong has retired as Telecommunications Area Manager, Gander, Nfld. A native of St. John's, Mr. Strong worked in telecommunications for 37 years, first with the British Air Ministry at Botwood, Nfld., and since 1938 with MOT at Gander. Mr. Strong (centre in the photo) was presented with an electronic tool kit by his co-workers at the retirement party. At left is Mrs. Strong; R.P. Myrick made the presentation.

M. W.J.G. "Jim" Strong a pris sa retraite, quittant ainsi le poste de gérant des Télécommunications à l'aéroport de Gander T.-N.. Originaire de St-Jean, T.-N., M. Strong a été au service des Télécommunications pendant 37 ans. Il a été au ministère britannique de l'Air avant d'entrer au ministère des transports en 1938. M. Strong (au centre) s'est vu présenté un ensemble d'outils électroniques par ses compagnons de travail. Mme Strong semble aussi apprécier ce cadeau présenté par M. R.P. Myrick.



Follin Pickel, Senior Instructor with the Air Services Training School, retired recently after 30 years with the Government. Mr. Pickel updated electronics courses for technicians in navigation, radar and communications. He is seen here with his wife, Marguerite. Mr. and Mrs. Pickel are making their permanent home at Goderich, Ont.

M. Follin Pickel, instructeur à l'école des services de l'Air, a pris sa retraite après 30 ans de service au gouvernement. Il a participé au développement, à l'évaluation et à l'amélioration de nombreux cours en système électronique. On le voit ici en compagnie de son épouse Marguerite. M. et Mme Pickel sont établis à Goderich, Ont.



W.A. "Mac" MacPherson retired as Senior Management Review Analyst (Finance) after 35 years with the Government. A farewell party was held at the Hylands Golf Club, near Ottawa's Uplands Airport.

M. W.A. "Mac" MacPherson a été l'invité d'honneur lors d'une soirée au Hylands Golf Club, pour souligner son départ de la fonction publique après 35 ans de service. Il occupait un poste d'analyste à la gestion des systèmes.

J.A. Lenahan retired in November as Regional Director of Air Services at Vancouver. Mr. Lenahan joined MOT in 1941 as a meteorologist. He was later in charge of the Weather Offices at Gander and Uplands before becoming Regional Director, Air Services, at Moncton and then Vancouver. At his retirement party, Mr. Lenahan was presented with a crest by the Abbotsford International Air Show Society, marking the cooperation he had extended on behalf of MOT to the annual show.

M. J.A. Lenahan a pris sa retraite en novembre dernier abandonnant le poste de directeur régional des services de l'Air à Vancouver.

M. Lenahan était au service du ministère depuis 1941 alors qu'il était météorologue.

Il a, au cours de sa carrière, été en charge des stations météorologiques de Gander T.-N. et d'Uplands à Ottawa, avant d'être nommé à Moncton et à Vancouver en tant que directeur de l'Air.

Lors de la réunion tenue en son honneur, M. Lenahan s'est vu remettre un écusson de la Société internationale des spectacles aériens, en reconnaissance de la coopération dont il a fait preuve, au nom du ministère des Transports, lors de la représentation annuelle.

Gordon Odlum, for 32 years a lightkeeper and assistant lightkeeper, has retired from MOT. Mr. Odlum, of Vancouver, has worked at many British Columbia lightstations, including Triple Island, Race Rocks and Point Atkinson. He was on hand to explain lighthouse operations to many of the 6,000 tourists who annually visited Point Atkinson in recent years.

M. Gordon Odlum qui pendant 32 ans a été gardien de phare ou assistant gardien a pris sa retraite du ministère. Originaire de Vancouver M. Odlum a travaillé dans plusieurs phares de la Colombie-Britannique dont entre autres Triple Island, Race Rocks, et Port Atkinson. Depuis quelques années il s'est fait un plaisir de renseigner les 6000 touristes qui chaque année visitent le phare de Port Atkinson.

J.S. "Sam" Tracy, District Financial Officer in Victoria, has retired after 38 years with MOT. Mr. Tracy, whose first job was messenger in the Civil Aviation Division, later worked in accounting. He was awarded the Queen's Coronation Medal in 1953 for helping to set up the Air Services Branch and its decentralization into regions. Mr. Tracy was posted to Saint John, N.B., before moving to Victoria in 1966.

M. J.S. "Sam" Tracy, préposé aux finances dans la région de Victoria, a pris sa retraite après 38 ans de service au MOT. M. Tracy avant d'arriver dans la comptabilité a travaillé à la division de l'aviation civile. En 1953 il s'est mérité la Médaille du Couronnement de la Reine pour avoir participé activement à l'organisation et à la décentralisation des services de l'Air. M. Tracy résidait à Saint-Jean, N.-B., avant d'être muté à Victoria en 1966.

George Henry Lentsch, who began with MOT as a $1320-a-year radio operator in 1941, recently retired from the position of Superintendent, ATS Operations, Vancouver. Prior to moving to Vancouver in 1961, Mr. Lentsch instructed air controllers at Toronto.

M. George Henry Lentsch qui a débuté en 1941 avec le ministère des Transports comme opérateur radio au salaire annuel de $1320., s'est récemment retiré, abandonnant son poste de surintendant des opérations ATS à Vancouver. M. Lentsch a travaillé comme instructeur des contrôleurs aériens à Toronto avant sa mutation à Vancouver en 1961.



The newly organized Telecommunications and Electronics Branch of Air Administration held its first meeting of senior Regional and Headquarters managers. The new organization will provide improved services to its customers and make the best possible use of the T&E resources and expertise.

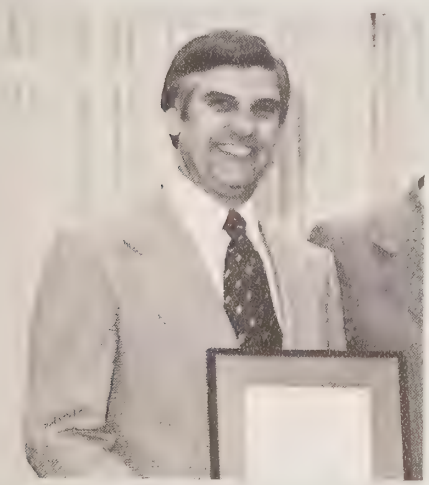
La Direction des Télécommunications et de l'Électronique de l'Administration des transports aériens, nouvellement réorganisée, a tenu la première réunion de ses principaux directeurs des bureaux régionaux et de l'administration centrale. Cette réorganisation permettra d'offrir de meilleurs services aux clients et une utilisation maximale des ressources et des connaissances techniques.

awards primes

Autres Primes/Other Awards: Francis Ryan, Ottawa, $290...John Harris, Rexdale, Ont., and/et Adolph Winsel, Toronto, shared awards/primes communes de $325... James Hutchison, Weston, Ont.,$150... Wayne Quirt, North Bay, Ont., $145...Murray Champniss, Richmond, B.C/C.-B., $100... Cyril Middleton, Edmonton, $100... $90 each to/chacun à Arthur Doerksen, Edmonton; William Pratt, Surrey,B.C/C.-B., Maurice Fitzpatrick, River Glade, N.B./N.-B.; Michel Paquet, LaSalle, Quebec... William Gillespie, Sydney, N.S./N.-É., $85...Claude LeGuerrier, New Sudbury, Ont., $75... and/et $50 to/à Vince Silva, Alert Bay,B.C./C.-B.; Kay Edgar, Edmonton; Sadie Boyle,Dorval,Québec; Stephen Cochran, Ottawa.

Fernand Caron received an $800 supplementary award for suggestions concerning Telex at Mirabel Airport. Earlier, he received $200 for the same suggestion.

M. Fernand Caron de Montréal, a reçu un supplément de $800 à une prime de $200 qu'il s'est méritée en février 1974, pour avoir fait une suggestion judicieuse quant à l'emploi du système Télex de Mirabel.



Ernest Brooks identified the need for an access road at Toronto International Airport, and won $750. (left)

M. Brooks a reçu la somme de $750 pour avoir déterminé le besoin d'une route d'accès à l'aéroport de Toronto pour les véhicules de la construction. (à gauche)

Peter Delaat, mechanical technician in Toronto, won $1,500 for modifying airport snowblowers so that they will last longer. (right)

M. P. Delaat s'est mérité un chèque de $1,500 pour avoir apporté plusieurs modifications aux souffleuses à neige de l'aéroport de Toronto, ce qui allonge leur durée. (à droite)





L. P. MacLean, recently appointed Senior Ministry Executive-Legal, comes to the Ministry from the Department of Justice where he was a Senior Legal Advisor. A graduate of Dalhousie University Law School, Halifax, Mr. MacLean was in private law practice in Edmonton before becoming Senior Solicitor to the Alberta Workmen's Compensation Board. He joined the Federal Department of Labour in 1966 as Legal Counsel to the Canada Labour Relations Board.

M. L. Patton MacLean, récemment nommé au poste de Conseiller principal du Ministère (Contentieux), était auparavant Conseiller juridique principal du ministère de la Justice. Diplômé de la Faculté de Droit de l'Université de Dalhousie, à Halifax, monsieur MacLean a eu son propre cabinet à Edmonton et est ensuite devenu avocat principal de la Commission des accidents du travail de l'Alberta. Il entra, en 1966, au ministère fédéral du Travail pour y occuper le poste d'avocat-conseil du Conseil canadien des relations ouvrières.



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Photo: Gordon Thomas



Mrs. Ann Gorman, an Air Traffic Controller at the Area Control Centre, Toronto International Airport, is one of a growing number of female controllers. There are seven area control centres across Canada located at Gander, Moncton, Montreal, Toronto, Winnipeg, Edmonton, and Vancouver. Ann is responsible for airplanes operating on IFR (instrument flight rules) in the Ontario region.

Mme Ann Gorman, contrôleur de la circulation aérienne du Centre de contrôle de secteur à l'aéroport international de Toronto, est une d'un nombre toujours croissant de femmes contrôleurs. Il existe sept centres de contrôle de secteur au Canada, soit ceux de Gander, Moncton, Montréal, Toronto, Winnipeg, Edmonton et Vancouver. Ann est responsable des aéronefs volant à l'aide des instruments pour la région de l'Ontario.

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CONTENTS/SOMMAIRE

MESSAGE 3

SAFETY 4

FLYING THE ALASKA HIGHWAY 7

MARINE EMERGENCY 8

RÉGLEMENTATION DE LA POLLUTION 12

WOMEN ON THE MOVE 14

PLACE AUX FEMMES 18

THE WELLAND 22

LE CANAL WELLAND 25

LIFELINE TO SAFETY 28

LA RADIOBALISE DE SECOURS 31

TRANSCAN/MINI-REPORTAGES 34

AWARDS/PRIMES 37

RETIREMENTS/RETRAITES 38

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Del Taylor


L.P. Maclean

Message



William Huck

I think it is fair to say that no matter how high our safety standards are, we must always strive to improve them.

Safety, however, must be balanced but not compromised by economic and other factors even though it has become evident that safety with no consideration of cost is not acceptable to the public.

The degree of success in safety in the field of aviation is impressive but we must maintain and improve these high standards. The minute we relax our vigilance, society will tell us that relaxed safety standards are not acceptable.

Studies of world aviation safety show that safety systems are generally successful and that about 80 percent of accidents are caused by human factors.

I believe, however, that if we were successful in eliminating all human factors within the system itself, irrespective of whether or not we audit the system extensively, we would still have some problems.

These problems would be the result of outside pressures on the safety systems brought about by the demands of society for less noise, less pollution, less work, cheaper travel, and a host of other factors.

In other words, it is the job of the aviation specialists to maintain the delicate balance between safety and economy. While factors such as profits and competition influence the manner in which we fly, it is our job to see that safety standards are kept at the forefront. It is our job to see that these standards do not fall by the wayside in the wake of economic or social pressures.

Je pense qu'il est juste de dire que si rigoureuses que soient nos normes de sécurité, nous ne devons cesser de nous efforcer de les améliorer.

En matière de sécurité, il faut tenir compte de nombreux critères, y compris les critères économiques. Quoiqu'il ne faille pas tout sacrifier à ces derniers, il est devenu évident que le public n'accepte pas la sécurité à n'importe quel prix.

Dans le domaine de l'aviation, on a obtenu des résultats importants en fait de sécurité mais nous devons maintenir et améliorer l'excellence de ces normes.

À la minute où nous relâcherons notre vigilance, la société nous dira que le laxisme n'est pas acceptable en fait de normes de sécurité.

Des études sur la sécurité dans le monde de l'aviation montrent que les systèmes de sécurité donnent généralement satisfaction et qu'environ 80% des accidents ont des causes humaines.

Je crois, néanmoins, que si nous réussissions à éliminer tous les facteurs humains que le système lui-même comporte, que ce système ait ou non été scrupuleusement éprouvé, nous aurions encore certains problèmes.

Ces problèmes seraient la conséquence de pressions qui s'exercent de l'extérieur sur les systèmes de sécurité et qui résultent des exigences de la société, laquelle veut moins de bruit, moins de pollution, moins de travail, des voyages moins coûteux, et une foule d'autres choses.

En d'autres mots, il appartient aux spécialistes de l'aviation de maintenir un équilibre délicat entre la sécurité et l'économie. Bien que des éléments tels que les profits et la concurrence influencent la manière dont nous volons, c'est notre travail de veiller à ce que les normes de sécurité conservent une importance primordiale. C'est notre travail de faire en sorte que ces normes ne soient pas négligées du fait des pressions économiques et sociales.

SAFETY

by

Bill Dunstan

Whether transportation is by supersonic jet, light aircraft, ocean liner, speedboat, rowboat, train, car or bicycle, one need is constant safety.

The Transport family spends much time, energy and ingenuity in search of safety, establishing within its jurisdiction design and equipment regulations, setting standards for crew, and laying down procedures.

The Ministry does not, of course, work alone, but in collaboration with the transportation industry and the provinces. In the marine, air and surface spheres, new standards constantly are being developed to enhance the safe design, construction and operation of ships, aircraft and surface transport. The Ministry seeks to ensure that transport safety regulations keep pace with the needs of industry and the public.

Le chef de l'information générale du Bureau des affaires publiques du ministère des transports nous entretient de la sécurité dans les 3 grandes sphères d'activité du ministère, soit Air, Marine et Surface. Il nous donne de nombreux exemples d'efforts déployés pour maintenir la sécurité au plus haut niveau possible.

MARINE

In the marine realm, great strides have been made in electronic traffic surveillance and management, to cut down the possibility of ship collisions in Canada's major shipping areas. These are radar and other electronic facilities by which the positions and courses of ships may be ascertained and their captains advised on safe and expeditious passage.

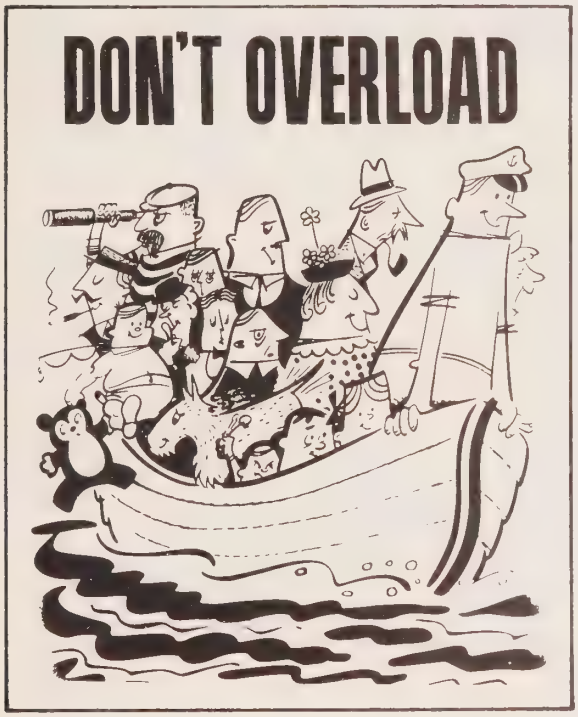
Such traffic management facilities now are in operation at Chedabucto Bay, N.S.; Saint John, N.B.; Halifax, N.S.; Come-by-Chance, Newfoundland and in the St. Lawrence – Great Lakes system as far west as Lake Huron.

On the west coast, a similar traffic management system which cost $15 million is in operation in the Strait of Juan de Fuca and the Gulf Islands in the vicinity of Vancouver and in the Strait of Georgia.

New vessel traffic management systems are planned in the Great Lakes area and on the west coast as well as improvements to those in operation. Talks with U.S. authorities are aimed at establishment of vessel management systems in boundary waters.

More than 100 marine surveyors work in the field of ship and equipment safety inspection and, when necessary, investigate marine accidents. It is planned to increase their number.

Following years of consultation with the industry and the provinces, a new watchkeeping – mate certificate has been devised to streamline and integrate the requirements for the certification of junior officers. Better qualified personnel will mean better safety.



Safety in small boats is an important aim. The Ministry is concerned with safe boat design, establishing safe load and power limits, and promoting safe boating practices. The Ministry has done much research in developing lifejacket standards in consultation with the Canadian Consumer Association and others.

The Canadian Coast Guard provides the marine component of the Canadian Search and Rescue Organization, and is increasing its fleet of specially designed and equipped search and rescue craft. It now has 82 vessels and 26 helicopters which can respond to marine emergency calls. These include 17 cutters, self-righting lifeboats, launches and other power craft particularly designed for search and rescue work.

A Hovercraft air-cushion vehicle has proved effective on the west coast in shallow and rocky waters.

An agreement was reached with the United States for cooperation in the use of radiotelephone communication on the Great Lakes for distress, safety and navigational purposes. The two countries also cooperate in ice information and icebreaker services in the area.



To aid search and rescue operations, regulations were enacted last July that require all tugs over five tons to carry Search Initiator Buoys which will float free and beam a signal if the ship sinks. When the buoy floats, a radio transmitter automatically broadcasts its position for at least 48 hours. These buoys are fluorescent orange in colour and will flash an amber light for at least 48 hours.

Last August, passive radar reflectors were made mandatory for all non-metallic vessels and all vessels between 39.6 feet (12 meters) and 65.6 feet (20 meters) in length to make them easier to detect by radar.

Small vessels, especially those constructed of wood, often do not show clearly on the radar of other ships, increasing the danger of collision.

The radar reflectors will also help to locate small vessels in bad weather.

A recent amendment to the Small Vessels Regulations stipulates that vessels up to 26 feet (7.9 meters) or less, day sailing craft up to 40 feet (12 meters) which have no cabin, and vessels

powered by paddle or oars, carry a personal flotation device, for each occupant. These are more comfortable than lifejackets but less effective.

Next spring, the Ministry will inaugurate a new marine broadcast from all eight Great Lakes coast stations making current marine weather and navigation information continuously available to mariners. Similar equipment is scheduled next for the lower St. Lawrence area and a program is under way to extend the service to east and west coast areas.

AIR

In response to increasing Arctic air traffic, the Ministry has stepped up flight safety in remote northern parts of Canada by a $3.7 million program for a greatly improved system of air navigational aids.

New strict standards govern the operation of small commercial aircraft, setting specific training and proficiency requirements for flight crews and cabin attendants. The standards ensure a higher degree of safety for both aircrew and passenger and will bring these operations more in line with those of large commercial passenger air operations.

A major air safety program is the manufacture and installation of 12 joint enroute terminal systems (JETS) at a cost of $18.6 million as part of an automated air traffic control improvement project to be completed in the mid-1980's. This system will help relieve some of the pressures facing air traffic controllers near such large centres as Toronto and Montreal.

An associated development was the award of a contract for a central computer complex to be used in developing a $4,367,000 air traffic control simulation centre in the Ottawa area, expected to go into operation in April 1975.

It will provide an air traffic control research and development facility that will be unsurpassed in the world and will be used also for training new controllers.

A program to provide digital radar simulators for controller training at Moncton, Toronto and Montreal regional air traffic control training schools also is under way.



L.J. Harker of the Regulations and Licensing Section, who attended the first Flight Instructor Refresher Course 15 years ago, completes preflight instrument check with Kim Goodine of the Brampton Flying Club in London, Ontario at the 50th of these courses.



John Miller of the Toronto Region conducts a class in the five day MOT-funded training event.

Since 1952, the Ministry has maintained a program to pay for refresher courses for flying instructors in order to standardize training methods at flying schools and clubs across Canada, with resulting benefits in terms of safety. In 1974, the Ministry contributed $50,000 to this program.

The Accident Investigation Division is responsible for investigating aircraft accidents with the aim of finding the cause and guarding against repetitions.

The Ministry's Air Safety Division is currently working on some 60 safety research projects. These range from wake turbulence from large jetliners to the fire resistance of aircraft interiors. This has enabled the Ministry to feed back to the aviation community the information gained from these studies, investigations and research. The service has met with strong favour from commercial and private pilots.

The Ministry has made great strides in the promotion of road and motor vehicle traffic safety during the past few years.

Strict regulations of the design and construction of motor vehicles, including motorcycles, minibikes and snowmobiles, has resulted in safety being designed into all such vehicles rather than being sold as an extra or option.

This has resulted in fewer motor vehicle collisions, deaths, severe personal injuries, health impairment and property damage resulting from deficiencies in vehicle design and construction.

With the cooperation of the provinces, the Ministry has developed road safety goals calling for a reduction in road traffic fatality rates by 15 percent over the next five years.

With every administration highly concerned with safety it would, of course, be impossible to prepare a definitive report on the Ministry's safety-oriented operations in a brief article. Its approach, in general, is two-fold: to develop a safety program of regulations, standards and services in all modes; to gain public and industry support for the program through training, public relations, and other means.

Think, and practise safety — you may never know what missed you!

FLYING THE ALASKA HIGHWAY

Flying the magnificent Alaska Highway in a light plane is not just an unforgettable experience. For the unwarned and unprepared, it can be hazardous.

To warn and prepare, the Aviation Safety Division has produced the folder "Flying the Alaska Highway" for air tourists who plan to fly this fascinating route. Available from Information Canada outlets and the Ministry of Transport, the folder is also being distributed widely among the Visual Flight Rules (VFR) fraternity in the United States. Most accidents along the route involve American fliers unfamiliar with the area.

The route along the wartime highway is magnificent — rugged terrain featuring mountains on either side, over a mile high. The catch is that the peaks are still there, even when the weather shrouds them, as it occasionally does.

The folder lists the charts and other materials that should be read before setting out. It points out that one mountain peak may look much like another, an interesting challenge to navigational skills. And much of the route goes through designated "sparsely settled areas" where regulations require pilots to carry a two-way radio, an Emergency Location Transmitter (ELT), survival gear and food.

To give impact to the lesson, there are photographs of aircraft that crashed at specific locations on the route, along with a description of how it happened (with a hope that readers will avoid a repeat performance).

MARINE EMERGENCY

by

Mary Woodbury

On February 4, 1970, the oil tanker *Arrow* struck Cerberus Rock in Chedabucto Bay. The next four months were consumed by the recovery of millions of gallons of heavy bunker oil in the most serious oil spill in Canada's history. Out of that incident, unfortunate as it was, came an organization through which most spills occurring within Canadian waters can be contained in a relatively short time, with the responsibility for cleanup and control laid out clearly in the Canada Shipping Act and the Federal Contingency Plan.

The Operation Oil report on the *Arrow* cleanup made several recommendations which have been embodied in the Marine Emergency Organization.

In 1971 the office consisted of two officials, Captain W.J.H. Stuart (now Director of the Canadian Coast Guard), as senior pollution contingency officer and Captain Michael Greenham, as pollution contingency officer. Now it is staffed with planning officers, liaison officers, operational and regional officers. These men form a tightly-knit, highly-trained group working in the field and at headquarters. As Captain Greenham says "When the preventative measures fail we act as undertakers and janitors, involved in the operational end of marine pollution as a functional command and control system."

Un article de Mary Woodbury sur l'organisation d'urgence du ministère des Transports en cas de déversements graves d'hydrocarbures. L'article nous renseigne aussi sur l'équipement utilisé lors de manoeuvres d'urgence.

STRUCTURE

The operational structure is simple. Headquarters looks after equipment acquisition, administration and coordination of marine emergencies. There is an office in each region, headed by a Regional Marine Emergency Officer (RMEO) – pronounced "Romeo!" He receives functional guidance from Ottawa and is staff officer to the appropriate Regional Director of Marine Services. Each RMEO has equipment and manpower available to him.



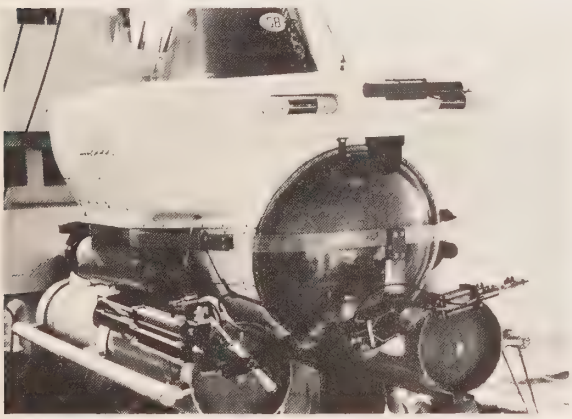
Victim of oil spill.

The RMEO Maritimes ensures that contingency plans for all Atlantic ports from Saint John, N.B. to P.E.I. are prepared. For example, he will deal with a spill in the Bay of Fundy, organize resources, handle the administration, and supervise the use and care of cleanup equipment. If a concerned citizen phones up and says, "There is oil all over the harbour", the regional officer and his network of On-Scene Commanders do something about it immediately. He may discover that

an oil company is accidentally discharging an abnormally high amount of oil in its effluent. He has the resources to deal with it effectively.

When a floating gasoline station on a barge in Vancouver Harbour blew up in January 1974 Captain Ian Young, the Pacific RMEO was on the scene in minutes. At 7:00 a.m. the next morning Captain Young went home, after the barge had been towed to the north shore far away from the several fuel storage tanks on the waterfront.

The office's public service is escalating in keeping with the public conscience. Three years ago, Captain Stuart and Captain Greenham flew off to the big spills like firefighters. Now, each region has the capability of dealing with most spills; better reporting systems mean more and smaller spills are noticed and contained. The organization is built for the spills which cannot be handled by the polluter himself but is on the spot for any mishap.

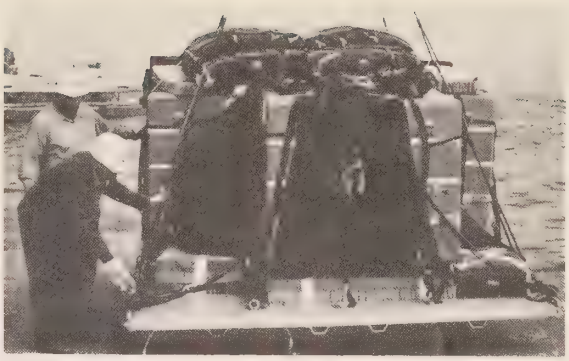


Two-man submersible 'Aquarius' used by Capt. Greenham and Dr. Gill to survey the sunken oil barge 'Irving Whale'.

EQUIPMENT

About $4.5 million is invested in pollution cleanup machinery positioned across the country at 30 strategic locations: everything from the original slicklicker, or oileovator, which picks up heavy residual oil on nylon conveyor belts and rolls it into barrels, to the sophisticated inflatable boom that looks like a nifty little runabout in disguise. Towed to the scene of the spill, that runabout automatically deploys and releases a 1600-foot boom around a vessel to contain an oil slick in less than 20 minutes.

Another effective piece of equipment is the ADAPTS, the Air Deployable Antipollution Transfer System, which is really a diesel engine, pump, discharge hose and a parachute array. It can be



ADAPTS – $225,000 worth of "air deployable antipollution transfer system' that can be air-dropped aboard a stricken tanker for lightering operations.

dropped from a Hercules aircraft adjacent to a stricken vessel where, independent of the ship's facilities, it can transfer oil from a holed tank to an empty one or pump out and transfer the entire cargo of the vessel if it is in serious difficulty.

Each month new equipment is being tested. The Cleanup Incinerator developed by the Marine Emergency Office and Kenting Ltd. is the latest example. Essentially it takes soiled sand and stones from an oily beach and feeds the material through a burning and cleaning process which makes it fit for return to the beach. An automatic boom, made in Britain, was not fully effective under Canadian weather conditions so the Marine Emergency Organization carried out extensive tests which resulted in ten modifications. These modifications have since been made on every unit sold throughout the world, because they are an improvement on the original design.

All the equipment spread across the region is interchangeable. The boom in Montreal marries with the boom in Newfoundland. There is a standard set of equipment for each location, depending on the potential risk of spills. A large spill can be handled in any region with the aid of an airlift transferring additional equipment from adjacent stockpiles.

Video tape training modules are being produced with an eye to personnel readiness. The first two modules show how to handle an oil spill in a small river and public relations at a spill site. Eight more films are planned.

POLLUTER'S RESPONSIBILITY

In all cases the onus is on the polluter to clean up his own mess. If he is reliable, then there

is no problem. When the Imperial Sarnia ran aground in the St. Lawrence in April 1974, Imperial Oil called an outside pollution firm. The Government's responsibility is to be on the scene and make sure it's done properly, as well as lend assistance.However,if there is a sizeable spill and the polluter has only 10 men, a shovel and a skiff on the scene for cleanup then MEO takes over quickly to protect the environment. Basically, the aim is to ensure a fast, adequate response to any pollution in Canadian waters. The polluter foots the bill.

The more commercial companies with good cleanup equipment the better. It creates an incentive for the polluter to do the best job at the most reasonable price and ensures that in the case of a massive spill the public and the private sector are prepared to attack it together and clean it up as quickly as possible. It is a long, dirty job and the longer the pollution stays around the more costly it is to marine and bird life.

What about the supertanker? Much has been published recently about the enormous tankers that now ply the oceans of the world. Spills from such vessels could be massive and pressures are building to make mandatory double bottoms on such vessels. While in Canadian waters, supertankers are subject to strict traffic management controls. There is still as much danger, however, from the many older and smaller tankers plying our waters under assorted flags and owners.

CANADA'S ROLE

Canada ranks as one of the leading nations in the organization and implementation of marine emergency operations. This international recognition was seen recently when the Intergovernmental Marine Consultative Organization (IMCO) asked Canada to prepare the standard UN paper on contingency planning. The fifty-page manual on how nations can set up a response structure to combat oil pollution was tabled in November 1974 and will be discussed this spring at the marine environmental section of the UN in London.

In August 1974 the 206,000 ton super-tanker Metula ran aground in the Straits of Magellan losing some 65,000 tons of crude oil. At the invitation of the Chilean Government, Captain Greenham flew down to Punta Arenas to advise on the remedial action that the government could take to salvage the ship and the remainder of the cargo and to minimize ecological damage.

Internationally, Canada has an agreement with the U.S.A. for contingency planning and all pollution cleanup and is holding discussions with France and Bermuda. Canada has made approaches to France in regard to joint protection of St. Pierre and Miquelon. Bermuda has the problem of being at the centre of so many currents and weather bands that a spill a thousand miles away will result in pollution on its beaches. Canada is holding discussions with Bermuda with a view to providing assistance in case of spills.

On the regional scene, the Dartmouth Agency was requested to respond to an oil spill on the campus of St. Francis Xavier University last spring. While this spill was beyond the mandate of "navigable waters", the Marine Emergency Office at Halifax was the only agency around with the equipment and know-how to handle the problem. And he did!

The Arrow spill was expensive partly because very little effective cleanup equipment was available. Now, such equipment is on hand, staff know how to use it and local people are trained on the scene. We have the capability of restricting severe pollution and protecting the environment of our coastal and inland waters.



The M.V. Erawan, followed by pollution cleanup equipment, is towed into Vancouver Harbour following collision with the M.V. Sun Diamond Sept. '73.

REPORT OF AN OIL SPILL

by Dr. S.D. Gill
Scientific Advisor to the Marine Emergency Office

At 0530, Sept. 30, Terry Hayes the Regional Marine Emergency Officer Maritimes was awakened by a telephone call informing him that an oil tanker with a load of heavy residual fuel oil had run aground in the approaches to Dalhousie. Several of her cargo tanks had ruptured, releasing oil over the waters of the Bay of Chaleur. The ship, however, was not otherwise damaged, and proceeded to a berth at the Dalhousie jetty.

Mr. Hayes in turn called Saint John, N.B. and requested the predesignated on-scene commander, Capt. R.D. Shiels, to proceed to the area and initiate remedial action. Mr. Hayes directed the logistical support for the operation from his headquarters before proceeding to Dalhousie the following day. Mr. Shiels left for Dalhousie within the hour.

Meanwhile, a log boom from Canadian International Paper's Dalhousie plant was deployed around the ship — but not before some 85,000 gallons of oil had escaped. Because of the magnitude of this particular spill the petroleum industry requested the Ministry's assistance in cleanup operations in addition to its supervisory role. Since the oil threatened some 150 miles of shoreline on both the Quebec and New Brunswick sides of the Bay, the Senior Marine Emergency Officer, Capt. Greenham, and his Scientific Liaison Officer, Dr. S.D. Gill, flew from Ottawa by MOT aircraft to lend support to an operation that was escalating by the hour.

Soon cleanup equipment from the Marine Emergency Office began arriving: booms, slicklickers, communications equipment, and the more sophisticated Vikoma Seapack, and ADAPTS (Air Deployable Antipollution Transfer System) along with the more mundane boots, coveralls and gloves. In addition, the Saint John-based helicopter and CCGS *Wolfe* provided valuable support. The next day, helicopter reconnaissance revealed that oil had been washed ashore on both sides of the Bay of Chaleur, and cleanup operations began immediately.

A command post was set up in the Dalhousie Federal Building with a communications network linking the helicopter, the Wolfe, and cleanup operations in Quebec and New Brunswick. Pumps were put aboard the tanker to skim off the oil remaining in the ruptured tanks. A team of divers was hired to survey vessel damage and begin patching operations. Booms were deployed to protect the more sensitive areas of the shoreline, and private contractors were hired to start cleanup operations on the beaches.

Hotels in the area were filled to capacity as if the autumn colours had revived the season's dwindling tourist trade.

A second communications centre was set up in Carleton, on the Quebec side, by André Leduc, Marine Emergency Officer, Laurentian Region, to coordinate north shore cleanup operations.

Foot patrols carried out by the Canadian Wildlife Service began to reveal the toll suffered by the waterfowl population.

As the oil spread with every cycle of the tide, people from the nearby villages were hired to rake, shovel, bag and burn the oiled debris that washed up on rocky shores. The presence of enthusiastic and hardworking women among these crews added a colourful touch to an otherwise unpleasant task. Elsewhere bulldozers, graders, front-end loaders and trucks were brought in to remove the oiled sand and debris from the more accessible beaches. Meanwhile slicklickers were mounted on the self-propelled barges from Wolfe, and the crewmen began the arduous and dirty job of collecting the oil and debris contained in the boomed-off area around ship and jetty. The advice of the provincial authorities was sought in selecting suitable in-land dump sites. Helicopter reconnaissance continued as pockets of oil kept turning up further and further down the coast. However, as the days passed, the concentrated effort began to have its effect, and the situation improved.

Within a week the tanker had been patched and cleaned and she departed. Cleanup operations continued. Damage to the wildlife appeared to be confined to the waterfowl species. Daily press releases kept the public informed concerning the extent of the problem and progress of cleanup operations.

A month later, cleanup operations were continuing — but at a much reduced rate, and equipment was being returned to Saint John and Dartmouth bases where it in turn underwent a cleaning.

Le Dr S.D. Gill nous fait le récit d'un déversement d'hydrocarbures dans la région des maritimes.

RÉGLEMENTATION DE LA POLLUTION

par

Normand Héroux

Comme le Canada est un pays où il y a de grandes étendues côtières, la préservation des eaux, des rivages et des pêcheries préoccupe les Canadiens au plus haut point. Certains pays jugeront nos règlements maritimes trop sévères; ils penseront que le Canada est présomptueux d'imposer de telles sanctions alors qu'il dépend si étroitement des navires des autres pays qui chargent ou déchargent annuellement dans ses ports des millions de tonnes de marchandises.

Les Canadiens considèrent qu'il n'existe pratiquement pas de limites en ce qui concerne les exigences que peut imposer un gouvernement pour assurer la propreté de ses eaux territoriales pour la postérité. À mesure que les gouvernements deviennent plus conscients du problème, la réponse des citoyens à leurs initiatives doit refléter une plus grande prise de conscience et un plus grand intérêt pour les problèmes dont la solution assurera notre survivance.

SCÈNE INTERNATIONALE

Collaboration internationale

Le Canada poursuit le dialogue avec chaque nation navigante qui partage son désir, afin d'en arriver à l'application de mesures valables dans le monde entier.

The other side of Marine Emergency is presented in this article. It deals with the enforcement of regulations by MOT officers in charge of pollution prevention and surveillance.

Notre Ministère a participé à la conférence de l'OMCI de 1973 qui traita des problèmes de la pollution engendré par la navigation.

Le principal sujet abordé lors de cette conférence fut l'élaboration de règlements concernant non seulement les hydrocarbures déchargés par les navires mais aussi toutes autres substances polluantes déversées. Le projet se voulait un premier pas vers l'élaboration de règlements relatifs à la conception, la construction et l'équipement des navires transportant en vrac ou sous tout autre conditionnement, des hydrocarbures ou autres substances polluantes.

Il entendait voir à la conception de règlements s'appliquant à l'évacuation des eaux usées et des ordures par les navires.

Le ministère des Transports est toujours largement représenté dans les diverses sous-commissions de l'OMCI et a participé activement aux délibérations lors de la conférence.

UNE RÈGLEMENTATION APPROPRIÉE

Le Canada est l'un des pays qui a appliqué avec le plus de vigueur les mesures de protection des eaux. Notre gouvernement a non seulement procédé à la rédaction d'une réglementation concernant la pollution maritime qui respecte les articles des conventions internationales, mais il a toujours vu à ce que ses normes soient plus exigeantes que celles qui ont été fixées par ces conventions.

Il a aussi vu à ce que des mécanismes de révision soient prévus. Ces derniers ont permis entre autres de modifier les normes régissant le

déversement d'hydrocarbures purs ou en mélange, et d'eaux de lavage des réservoirs des navires.

Les nouveaux règlements sur la prévention de la pollution par les hydrocarbures contiennent des directives mieux appropriées faisant obligation aux capitaines de navires de rendre compte des largages d'hydrocarbures, ainsi que de nouvelles règles pour le chargement, le déchargement et le transbordement d'hydrocarbures purs ou en mélange; ils instituent également un nouveau mode de consignation des manutentions d'hydrocarbures à bord des bâtiments. Ils prévoient des dispositions au sujet de la construction, de l'entretien, et de la compétence du personnel des navires utilisés pour le transport de polluants. Ils touchent en outre au pilotage et à la manoeuvre des navires, aux types d'équipement de navigation et au matériel de lutte contre la pollution.

Certaines autres dispositions nouvelles touchent au contrôle de la circulation maritime en ce qui concerne les navires transportant des polluants, imposent le routage obligatoire de ces navires dans les eaux canadiennes, établissent la quantité maximale de polluants que chaque navire peut transporter et déterminent un minimum de réglementation pour l'équipement utilisé à bord des navires.

La Loi contient des dispositions relatives à la responsabilité pour les dommages causés par la pollution. La responsabilité absolue pour de tels dommages (c'est-à-dire la responsabilité sans preuve de faute ou de négligence) incombe au propriétaire d'un navire transportant d'importantes cargaisons de substances considérées comme polluantes et, dans certaines circonstances, au propriétaire de polluants. Cette responsabilité comporte l'obligation de payer les frais d'enlèvement de l'épave et de la cargaison, de l'assainissement des eaux polluées et du remboursement des dommages matériels. Il est tout particulièrement à noter que les dispositions prévoient l'indemnisation des pêcheurs pour les pertes de revenus qu'ils pourraient avoir éprouvées lorsque ces dernières ne peuvent être remboursées en vertu de la Loi sur la Marine marchande du Canada ou de toute autre loi.

SERVICE D'INSPECTION

Il est évidemment impossible uniquement depuis Ottawa d'exercer un contrôle effectif sur la pollution, aussi le Canada se trouve-t-il divisé en régions où des agents sont en poste exerçant un rôle de surveillance.

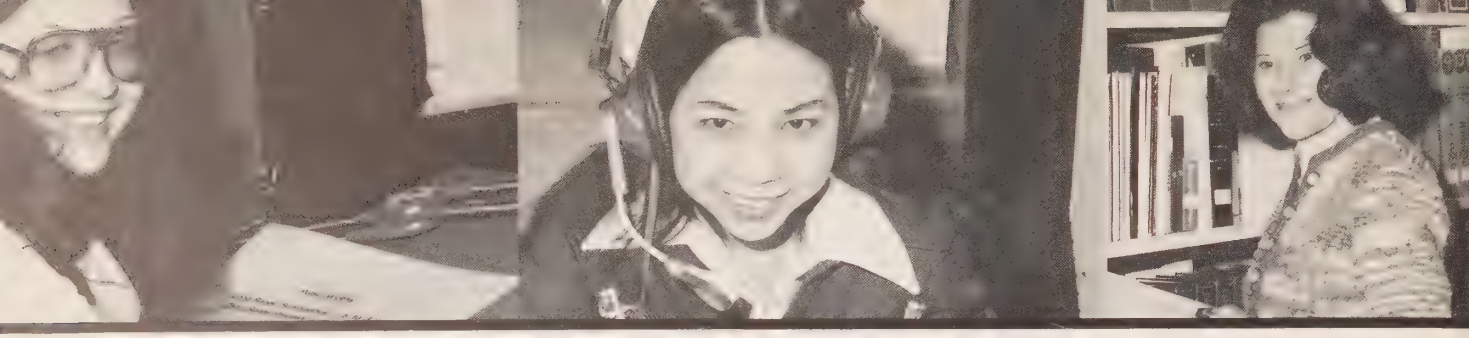
Pour chacune des régions Ouest, Centre, Laurentides et Maritimes des agents sont en devoir, patrouillant les eaux de leur territoire, contactant la direction des navires qui sont cause de déversements et représentant le gouvernement au cours des poursuites judiciaires.

La raison d'être de ces services n'est pas de traduire les coupables en cour dans le but d'obtenir le fruit des amendes, mais plutôt de finir par arrêter toute pollution causée par négligence, en développant un haut degré de conscience des dégats causés.

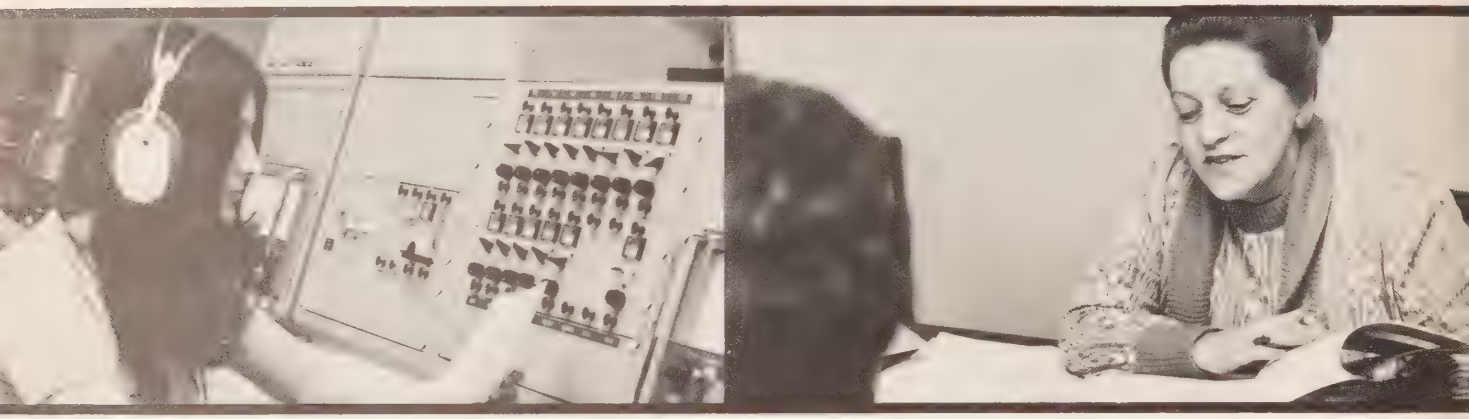
Le personnel dans les chefs-lieux des régions a beaucoup à faire, car c'est là que la direction des navires coupables de déversements doit s'expliquer avec l'administration canadienne. Des agents désignés sont au poste sept jours par semaine prêt à se déplacer à bord des navires pris en défaut où sur les lieux d'un déversement signalé par la patrouille aérienne, par la direction du navire, ou d'un autre navire, par le public et par des avions des Forces Armées. Dans ce dernier cas il s'agit surtout de signalements de déversements au large des côtes canadiennes ou dans l'Arctique. Quand c'est possible des photographies sont prises à titre de preuve.

Il est à signaler que le public a grande conscience des déversements d'hydrocarbures, à un tel point que nombres de cas ont été rapportés par des citoyens.

La prise de conscience de la gravité de la pollution des eaux a fait des progrès ces dernières années. Les nouvelles mesures plus sévères tendent à prouver qu'il est de plus en plus impératif d'en finir avec le gaspillage de nos eaux. Il est certain que d'ici quelques années les déversements se feront de plus en plus rares à mesure que les efforts déployés porteront fruit.



WOMEN ON THE MOVE



Photographs by : Yvon Ba

by

Lorraine Bazinet

From the CCGS *Vancouver* out of Victoria to the Moncton Control Tower, from North Battleford Telecom to the Mirabel Airport Architectural Division, women are appearing in roles long considered "male-only". The status of women in the Ministry of Transport is changing as managers and supervisors, responsible for the development and advancement of their staff, endeavour to ensure that women have equal career opportunities to men. Women, at the same time, are applying more and more frequently for positions within the Ministry that until recent years were filled only by men.

The future of women in transport essentially depends on two things. One, a continuing improvement in the managerial attitude towards women's issues and two, a constant appraisal by women of the type of employment they want to move into.

For management this means career opportunities based on an intelligent investigation of the possibilities and critical assessment of aptitudes, skill, and education. For women it means an honest look at their career hopes and abilities.

INTERNATIONAL WOMEN'S YEAR 1975

The United Nations has proclaimed 1975 as International Women's Year in an effort to accentuate the contributions of women to global society. Canada supported the UN proclamation and the government will concentrate on the promotion of equality of women in all aspects of life and, in particular, will inform and educate the general public on the changing attitudes concerning women's role in society.

Specifically, the aim of the Canadian program is to:

- promote equality between men and women;
- inform and educate on the changing attitudes concerning women's role in society;
- end discrimination against women in all aspects of life;
- create an awareness among Canadian women of career opportunities open to them;
- increase the number of women in positions of prominence in government, business and industry; and,
- recognize women's responsibility in the economic, social and cultural development of Canada.

The growing participation of women in the Career Assignment Program (CAP) of the Public Service Commission is one promising sign of growing managerial interest. CAP is a program of study, education and planned work assignments designed to help people judged to have senior executive potential, realize that potential. There are three women from the Ministry of Transport now enrolled in the program. As women discover the doors to this and other incentive programs open to them, the variety of occupational fields available to them will increase.

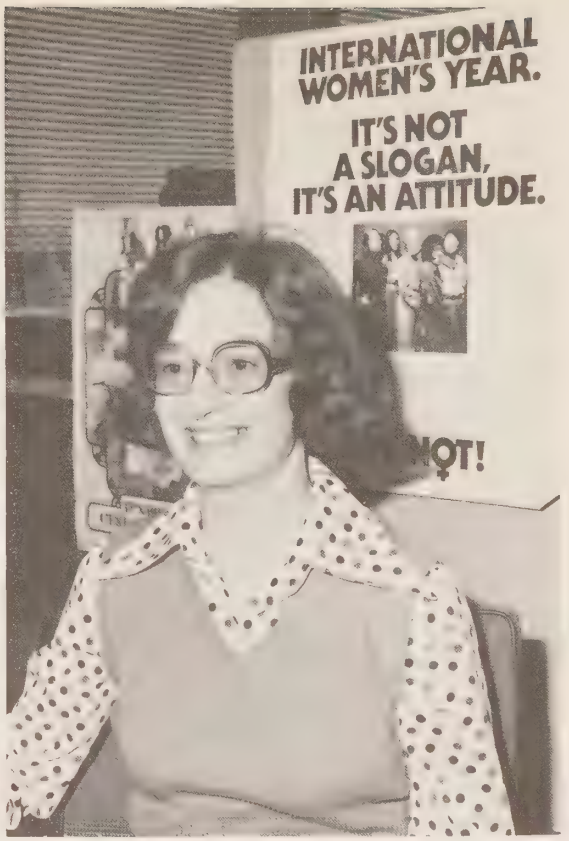
Many women who previously shied away from equal opportunity matters are becoming involved for the first time. Typical feelings were exemplified by the secretary who wrote, "I'm not a women's libber, but..." While she might not consider herself an ardent feminist, the goal of equal treatment in society has an understandable appeal. 1975 gives her the chance to look forward to a different future for herself.

Women employees face a challenge. As they are discovering in their chosen careers, equal opportunity requires equal commitment. This means accepting new responsibilities and participating in decision-making at every level. Also, the onus falls on each individual to become more career-minded, analyzing her aspirations, discussing her future with her superiors, and obtaining career counselling. When she has set a career goal for herself, it is up to her to seek ways to reach that goal... This may be by pursuing her education, improving present job performance, accepting job transfers, or accepting additional responsibilities. It is up to women to keep themselves informed of the opportunities available.

The future holds great promise. Shortage of managerial skills, diversified educational alternatives, changes in work patterns and changing roles in family life will permit equality to be achieved at all levels of work and eventually in all society.

Women in Transport

In the past year, statistics indicate a very healthy trend for women in the Professional and Scientific (PS) field, the Administrative and Foreign Service (AFS) and Technical categories. These categories have increased the number of women employees by about 65 percent in the last year. In the same period, however, women in the Administrative Support Category increased by 82 percent, with a significant increase in the clerical group. These figures underline the need for more use of developmental programs for women, especially in Administrative Support. A real shortage of female candidates at the policy, decision-making and managerial levels of the Ministry is greatly regretted.



Lorraine Bazinet, Co-ordinator, Equal Opportunities for Women, Ministry of Transport.

When Katherine Wood enrolled in the Air Traffic Control School in 1943, she and the other 39 girls were the first ones granted the opportunity. It wasn't until 1947, after diligent work as an assistant, that she received her Air Traffic license. Now, 32 years later, she is one of 35 women engaged in this exciting career. As she said – "You might call me a pioneer. In the early days, it was difficult, with little jokes and very very little responsibility. You had to be willing to work hard and stick to it. The secret has always been determination. I have seen many changes in my lifetime and I expect many more before I leave."

Other careers in the Technical category which women are currently following include Drafting, Illustrating and Radio Operation. In fact, Sandy McTavish, who teaches Radio Operation, says that 20 percent of the trainees this year are women. In 1968 there was one woman; this year there are 10.

The Canadian Coast Guard has been actively recruiting women for its college for the past two years. John Miller, who has participated in recruiting and selecting women for the college, says "Our experience indicates that the girls do extremely well academically. The struggle seems to be more in the area of environment. An engine room on a vessel is a confining, noisy, dirty place to work. Also, after a full day on board, there is nowhere to go to get away from it all. It has nothing to do with physical capabilities. But so far our vessels are designed for the task more than for the people employed in the task."

There are currently five girls enrolled at the Coast Guard College. Meanwhile, there are two women on the CCGS *Alexander Henry* out of Parry Sound: one is a Supply Officer, the other the Chief Steward.



Joanne McAuliffe who works in Central Publishing finds her job as a computer programmer both interesting and challenging.

Ruth Heron, who is new to the Traffic Safety Branch in Surface, is engaged in studying the human factor in safety. Miss Heron, who will receive her doctorate in Experimental Psychology this spring, admits that coming from the academic community to the Ministry has been quite a shock. She has discovered that she has to prove herself all over again. The scarcity of women in her category provides an interesting challenge in pioneering, but she would be glad of some company. All in all, there are 16 women in the Professional and Scientific category.

International Women's Year

The Honourable Marc Lalonde, Minister responsible for the Status of Women, has outlined the government's program and aims for International Women's Year. The program includes legislative action to amend the Canada Pension Plan and the Citizenship Act. Alterations to eight other Acts have already been introduced in the House of Commons. A bill establishing a Human Rights Commission also will be introduced.



Sadie Boyle, electronics technician at Montreal International Airport has been with the Ministry for 29 years. During the war she worked as a radio operator for the Canadian Army.

The general awareness program includes an advertising campaign which will bring the question of woman's role before the public. As Mr. Lalonde stated in his recent message on International Women's Year, "1975 should be a year in which all Canadians become aware of the principles of equality, the year in which we acknowledge that women have a major contribution to make and should be accepted as equal partner." Full equality in our country or in the Ministry of Transport will not be achieved in one year but the work towards effecting change must be continued.

International Women's Year gives everyone an opportunity to assess the programs and participation of women across the world. Canada is fortunate in that as an enlightened nation it provides, by law, equal opportunities. Enabling the working world to match the law is the concern of government, managers and employees.

Activities

- A program of discussion and consultation with managers will identify restrictions within their area of responsibility, to determine the facts and produce workable solutions.

- A program is being developed to establish the potential of women employees currently in the Administrative Support Category and encourage them to move to other categories.
- Briefing sessions on career planning are being scheduled for women employees and held across the country. These include the audio-visual presentation "It's up To You", describing career planning possibilities and responsibilities.
- Exhibits will be displayed in major shopping centres, secondary schools and universities to inform the general public of opportunities for women in the Ministry of Transport.
- Other activities under consideration include a review of the Special Officers Development Program (SODP), designed to provide development and experience for employees of the Administrative Support category for entry in the Administrative and Foreign Service category and the development of a communication system to inform and advise women employees in the Ministry.



Ruth Shryer, a former secretary, took the Special Officer's Development course and is presently in a research position training for administrative officer level. Here she confers with Nick Sardy.



Michelle Butler (standing) and Shelley McLeod, radio operators in Bull Harbor, Hope Island, British Columbia recently joined the telecommunications field. This photograph taken by the North Island Gazette of Port Hardy accompanied an article about these girls who are pioneering in the area of isolated assignments for single women.



Mrs. Trudy White, on staff at Wabush Airport, Labrador finds time after her clerical duties to assist with snowclearing, work with garage maintenance, master furnace operation and duty drive to Labrador City.



Mme Judith Holland-Baillie, est gérante au service d'information du nouvel aéroport international de Montréal à Mirabel. Elle se sent fort à l'aise dans les relations publiques, et trouve très intéressant les côtés gestion et organisation de son travail.

PLACE AUX FEMMES

1975, L'ANNÉE INTERNATIONALE DE LA FEMME

Dans le but d'accroître sensiblement l'apport féminin à l'ensemble de la société notre gouvernement s'est joint aux Nations Unies pour décréter 1975, l'année internationale de la femme. Dans ce même but le gouvernement verra à la promotion de l'égalité de la femme dans tous les aspects de la vie et éduquera le public en général pour qu'il ajuste son attitude face au rôle de la femme dans la société moderne.

Le programme canadien vise particulièrement à promouvoir l'égalité entre les deux sexes, à préparer la population à accepter le rôle accru de la femme dans la société, à éliminer toute discrimination contre la femme dans quelque domaine que ce soit, à améliorer l'éventail des carrières qui lui sont offertes, à augmenter le nombre de femmes remplissant un rôle d'importance au sein du gouvernement, des commerces et de l'industrie, et à reconnaître la responsabilité de la femme dans le développement économique, social et culturel de notre pays.

par

Mme Lorraine Bazinet

Que ce soit sur le navire de la Garde côtière *Vancouver* au large de Victoria, à la tour de contrôle de Moncton, au centre de Télécommunications de North Battleford ou encore à la division architecturale de l'aéroport de Mirabel, les femmes occupent des postes longtemps considérés comme l'apanage de l'homme. Le statut de la femme au ministère des Transports change à mesure que les directeurs et les chefs de service chargés du perfectionnement et de l'avancement du personnel s'efforcent d'offrir aux femmes des possibilités de carrières égales à celles des hommes. De ce fait, de plus en plus de femmes du Ministère posent leur candidature à des postes qui, jusqu'à ces dernières années, n'étaient occupés que par des hommes.

L'avenir de la femme dans le domaine des transports repose essentiellement sur deux facteurs. Il dépend premièrement de l'amélioration continue de l'attitude des membres de la direction face aux questions féminines et, deuxièmement, de l'estimation constante, par la femme, du genre d'emploi qu'elle désire occuper.

Pour la haute direction, cela suppose l'offre de possibilités de carrières établies d'après des études sérieuses sur le potentiel du candidat et l'évaluation critique de ses aptitudes, ses qualités et ses études. Pour la femme, cela signifie un regard honnête sur ses aspirations de carrière et ses aptitudes.

La participation accrue des femmes au programme d'affectation des cadres dans la Fonction publique est un signe prometteur de l'intérêt croissant de la Direction. Le PAC (Programme d'Affectation des Cadres) est un programme d'étude, d'enseignement et de planification des tâches, conçu dans le but d'aider les gens considérés aptes à occuper un poste de cadre supérieur à se servir de leur potentiel. Trois employées du ministère des Transports prennent part aux travaux de ce programme. Plus les femmes s'apercevront qu'elles peuvent se prévaloir de ce genre de programmes d'encouragement, plus la sphère des professions qui s'offrent à elles s'agrandira.

Un grand nombre de femmes qui autrefois se dérobaient aux questions d'égalité aujourd'hui s'engagent dans la défense de ces droits. L'exemple de la secrétaire qui écrivait "Je ne défends pas la cause de l'émancipation de la femme, mais..." est typique; bien qu'elle ne se considère pas comme une ardente féministe, cette femme souhaite, sur le plan social, une égalité de traitement qui est très compréhensible. L'année 1975 lui offre une nouvelle perspective d'avenir.

Les femmes, en tant qu'employées, relèvent un défi. Comme elles peuvent le constater au cours de leur carrière, l'égalité des privilèges suppose l'égalité des obligations, c'est-à-dire l'acceptation de nouvelles charges et la participation à tous les niveaux aux prises de décisions. De plus, la responsabilité incombe à chacune d'entre elles de s'intéresser davantage à ce qui touche sa carrière, d'analyser ses aspirations, de discuter de son avenir avec ses supérieurs et d'obtenir des conseils sur l'orientation de sa carrière. Une fois son objectif de carrière fixé, il n'en tient qu'à elle de trouver les moyens pour atteindre cet objectif, soit en poursuivant ses études, en améliorant la qualité et le rendement de son travail actuel soit en acceptant les mutations ou les responsabilités supplémentaires.

L'avenir de la femme est plein de promesse: le manque de personnes aptes aux postes d'encadrement, la diversité des orientations professionnelles, le changement des méthodes de travail et de répartition des tâches familiales lui permettront finalement d'atteindre l'égalité à tous les niveaux de travail.



Barbara Ann Davidson de Dartmouth en Nouvelle-Écosse occupe le poste d'infirmière à bord du ALERT, navire de recherche et de sauvetage de la Garde côtière canadienne. Barbara est fort à l'aise sur l'eau. On la voit ici en mission de sauvetage prête à apporter son aide.

LA FEMME AU MINISTÈRE DES TRANSPORTS

Les statistiques de l'année dernière révèlent une forte orientation du personnel féminin vers les domaines intellectuels, scientifiques, techniques et vers les services administratifs et extérieurs. Dans ces domaines, le nombre d'employés féminins a augmenté de 65% au cours de l'année dernière. Le personnel féminin de soutien administratif, de son côté, s'est accru de 82%. Ces chiffres dénotent le besoin de programmes de perfectionnement pour les femmes, surtout dans les services de soutien administratif. Le manque réel de candidats féminins au niveau de l'établissement des politiques, de la prise de décision et de la gestion est déplorable.

Lorsque Katherine Wood s'est inscrite à l'école de contrôle de la circulation aérienne, en 1943, elle et les 39 autres filles inscrites au cours, étaient les premières femmes à être admises à cette école. Ce n'est qu'en 1947, après avoir travaillé avec assiduité en qualité d'adjointe, qu'elle reçu sa licence de contrôle de la circulation aérienne. Aujourd'hui, 32 ans plus tard, elle est l'une des 35 femmes qui se sont consacrées

à cette carrière passionnante. Comme elle l'expliquait, "Vous pourriez me qualifier de pionnière. Au début, le travail était difficile, ennuyeux et comportait peu de responsabilités. Il fallait beaucoup de volonté pour s'acharner sur ce travail difficile. Le secret a toujours résidé dans la détermination. J'ai vu beaucoup de changements dans ma vie, j'espère en voir encore beaucoup d'autres avant de quitter mon poste."

Parmi les carrières techniques que les femmes entreprennent, on trouve entre autres le dessin, l'illustration et la radio, comme opératrices. Sandy McTavish qui enseigne cette spécialité, précise que 20% des stagiaires sont des femmes. En 1968, ce cours ne comprenait qu'une seule femme; en 1975, il en compte 10.



Ruth Heron, psychologue à la direction de la Sécurité automobile et routière, discute avec Brian Carr de l'évaluation des systèmes. Ruth s'occupe des facteurs humains à prendre en considération dans l'application des mesures de sécurité. Elle affirme que son travail est un défi perpétuel.

Au cours des deux dernières années, la Garde côtière canadienne a recruté activement des candidates pour son collège. M. John Miller, qui a participé au recrutement et à la sélection des femmes déclare, "Notre expérience nous montre que les jeunes filles réussissent très bien au point de vue scolaire. La difficulté semble plutôt venir du milieu de travail. La chambre des machines d'un navire est un lieu de travail exigu, bruyant et malpropre. De plus, après avoir passé la journée entière à bord du navire, elles ne peuvent s'en éloigner. Nous ne parlons pas ici de capacités physiques. Nos navires sont conçus davantage en fonction des tâches que des gens qui les accomplissent."

Actuellement, le collège de la Garde côtière canadienne compte cinq filles et le navire *Alexander Henry* au large de Parry Sound a deux femmes à son bord: l'une est agent aux approvisionnements, l'autre est commissaire de bord.

Mlle Ruth Heron, nouvellement nommée à la Direction de la sécurité automobile et routière, a été affectée à l'étude du facteur humain dans la sécurité. Mlle Heron, qui recevra son doctorat en psychologie expérimentale ce printemps, avoue que le passage du milieu scolaire au ministère a été brusque. Elle s'est alors rendu compte qu'elle devait à nouveau se surpasser. La rareté des femmes dans son domaine de travail représente un défi intéressant de pionnière mais elle apprécierait tout de même un peu de compagnie. Le domaine scientifique et intellectuel compte 16 femmes au total.

L'année internationale de la femme

L'Honorable Marc Lalonde, ministre responsable du statut de la femme, a établi les grandes lignes du programme et des buts du gouvernement pour l'année internationale de la femme. Ce programme comprend des mesures législatives destinées à modifier le régime de pensions du Canada et la Loi sur la citoyenneté. Des corrections aux huit autres Lois (notamment de la Loi sur la pension de retraite) ont déjà été déposées à la Chambre des communes. Un projet de loi créant une commission des droits de l'être humain sera aussi présenté.

Le programme d'éveil dans son ensemble comprend une campagne publicitaire qui portera la question du rôle féminin à l'attention du public. Comme M. Marc Lalonde le déclarait dans son récent message sur l'année internationale de la femme, "1975 devrait être l'année où tous les Canadiens prennent conscience des principes d'égalité, l'année où nous reconnaissons que la femme a une contribution importante à apporter et qu'elle doit être considérée comme une associée égale." L'égalité à part entière dans notre pays ou au ministère des Transports ne sera pas atteinte en un an mais le travail en vue de changements utiles doit être poursuivi.

L'année internationale de la femme permet à chacun d'évaluer les programmes et la participation de la femme dans le monde. Le Canada, nation éclairée, légifère sur le principe de l'égalité des chances. Permettre aux travailleurs de profiter des dispositions de la loi est le souci du gouvernement, des dirigeants et des employés.

- Un programme de discussions et de consultations avec les directeurs permettra de connaître les restrictions du secteur de responsabilités afin d'établir les faits et d'obtenir des solutions réalisables.
- Un programme dynamique a été mis en oeuvre dans le but d'établir le potentiel des employés féminins dans le domaine du soutien administratif et de les encourager à changer de catégories de travail.
- Des séances d'information sur la planification des carrières sont prévues pour le personnel féminin de tout le pays. Ces séances comprennent entre autres la présentation audio-visuelle, *"It's Up To You"*, ("Il n'en tient qu'à vous") décrivant les possibilités d'un plan de carrière et les responsabilités correspondantes.
- Les principaux centres commerciaux, les écoles secondaires et les universités présenteront des expositions afin de renseigner le grand public sur les possibilités que le ministère des Transports offre aux femmes.
- Les autres travaux à l'étude comprennent notamment l'examen du Programme spécial de perfectionnement des agents, conçu pour assurer le perfectionnement et accroître l'expérience des employés de soutien administratif afin de leur permettre d'accéder aux services administratifs et extérieurs, et la mise au point d'un système de communication destiné à informer et à conseiller les femmes à l'emploi du Ministère.



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The Welland

by

Thomas E. Appleton



The Father
of
The Welland Canal,
1793-1862

When Governor Simcoe gave the name "Welland" to the Chippawa Creek – in a moment of nostalgia for an English river – he could hardly have foreseen the man-made waterway which would one day lift ships over the Niagara escarpment. This rugged spine, which straddles the difficult portage across the 326-foot climb between Lake Ontario and Lake Erie, was the most formidable obstacle between old Canada and the newer lands to the west. Various devices attempted to overcome this but, as all of them depended on the strength of man or beast, none was more than barely adequate even in terms of the period.

In Simcoe's time Upper Canada was emerging from the wilderness. By the 1800's settlements were few, the population was small and scattered, and with no money there was little chance of improvement. Frontier economy, although tenacious for determined individuals, was without access to markets and sources of supply necessary for community life. As there were then no roads nor railways, the movement of heavy goods relied entirely on schooners for the Lakes, and bateaux on the rivers. Even if these could be connected – and there was a number of small channels here and there – they must join one or other of two great continental water systems, the St. Lawrence or the Hudson. With the opening of the Erie Canal in 1825, the United States was able to connect the western farmlands to the port of New York by means of transhipment from schooner to barge at Buffalo.

Fortunately for Canada, the first settlers in the Niagara Peninsula were motivated by much the same intent for their side of the border. Many were Loyalists from New York, New Jersey and Pennsylvania, and were accustomed to the hardships of life in North America. Having fought for their convictions a second time, in the War of 1812, they brought to the Province of Upper Canada something of the imagination and sense of purpose inherited from their forebearers to the South. Prominent among these energetic people, William Hamilton Merritt became the driving force behind the Welland Canal and the progenitor of inland water transportation in Canada.

Merritt recognized the threat of the Erie Canal long before it was opened, particularly when this was compounded by the Oswego Canal which was planned to join Lake Erie to the New York system. By law, much of the traffic with British settlers was compelled to use the cumbersome,

shallow and laborious route to Montreal by way of the St. Lawrence rapids, a grave handicap which could not be suffered indefinitely. To avoid strangulation it was necessary to improve the Canadian route, if the Provinces were to survive, by means of canals. This concept (which at the time was comparable financially to those now at James Bay or Churchill Falls) sounded a note which has echoed down the years — in 1832 when the Rideau Canal was opened, at the St. Lawrence Canals of the 1840's, at the completion of the Canadian Lock at Sault Ste. Marie in 1895, and again during the formative period of the St. Lawrence Seaway.

After surveying the route, Merritt's first problem was to raise money for the Welland Canal Company which, in 1824, was incorporated in the Province of Upper Canada. Although he saw the necessity for the Canadian route, Merritt was a businessman rather than a blind nationalist. Intentions were to finance the Canal wherever money could be raised, be it from shareholders in Canada, Britain or the United States. In the end, and despite heroic efforts by the Company, there was a desperate financial crisis which was relieved only when government funding was obtained from imperial and provincial sources.

Technical problems were no less difficult. Although Merritt was the principal promoter, the President of the Canal Company was his friend George Keefer, with whom he had surveyed the Chippawa Creek route in 1818. He also was a loyalist, and the two of them had helped to defend the Niagara Peninsula against the United States attacks of the 1812 War. Keefer, whose sons Samuel and Thomas achieved fame among founders of the engineering profession in Canada, took the lead in the practical side of building the Welland Canal, and it was he who turned the first sod in 1824.

The first Welland Canal was opened in 1829 when two little schooners, one Canadian and one from the United States, locked in from Lake Ontario at Port Dalhousie, climbed the escarpment, and emerged into the Welland River (Chippawa Creek) from where, joining the Niagara River about two miles above the Falls, they could make sail and proceed into Lake Erie. The building of this canal was a back-breaking effort which took five years of pick and shovel work in stiff clay. The locks, of which there were originally 39, had a mere eight feet over the sills and were lined with timber. As the Rideau Canal was also under construction about this time, Colonel By of the Royal Sappers and Miners sent one of his men to have a look at the Welland. By's engineer, a Scotsman by the name of MacTaggart, was somewhat scathing about wooden locks after the classical fitted masonry of the Rideau — which is still standing today — and is supposed to have remarked that they would be carried away in the Spring freshet "like a lot of birdcages". He was nearly right but the story illustrates the financial difficulties faced by Merritt and Keefer who were forced to cut costs. Perhaps MacTaggart was put out to find that the Welland locks were about two feet deeper than the Rideau.

Very soon there were other difficulties. The strong currents of the Niagara River were dangerous to navigation, and the canal had to be extended to enter Lake Erie directly at what is now Port Colborne. There were problems also with the feeder canal which provided water to produce the lift over the escarpment. This was dug from Dunnville by way of the Wainfleet marshes and necessitated an aqueduct to carry it across the Welland River, and eventually produced another navigable outlet. From these and other changes the second Welland Canal emerged, in effect a renovated version of the first. The greatest stimulus came when the entire project was purchased outright, in 1841, by the Government of the Province of Canada. The wooden locks were soon replaced by masonry, and the depth was increased to nine feet.

Although Merritt originally financed the Welland Canal from what is nowadays called the "private sector" it was obvious that only government could move on to the next stage of expansion which, in the second half of the nineteenth century, was mainly a matter for railways and canals. Merritt therefore moved into politics (he was elected successively to the legislatures of Upper Canada and the United Province from 1832-1860) and was heavily involved in the St. Lawrence Canals and various railways and bridges.

By the time that the St. Lawrence Canals were completed, in 1848, the Welland had already dropped behind and, in 1870, government decided to bring the entire system to a standard sufficient to take all ships likely to be in service on inland waters. For this purpose locks were to be 270 feet long and 12 feet deep. These improvements gave rise to the third Welland Canal which, by 1887, had been deepened to 14 feet and followed a more direct route from the Escarpment to Port Dalhousie on Lake Ontario.

In 1907 planning began for the fourth Welland Canal, often called the Welland Ship Canal. Although it had always been a ship canal, the little schooners and steamboats which were all it could handle up to that time had long ago become too small for efficient economic use, and could hardly be thought of as ships compared to the rising generation of Great Lakes carriers. The Great War seriously delayed construction, but when the fourth canal opened for traffic in August 1932 — the official opening was in 1930 — it was recognized everywhere as one of the world's greater civil engineering undertakings and a benchmark in the progress of Canadian technology. The occasion was dramatized by the passage of the largest vessel on the Great Lakes — the steamship *Lemoyne* — carrying 530,000 bushels of wheat on a draft of over 19 feet. As described in the publicity of the period, it was indeed "A Canadian Conception, A Canadian Achievement" which, among other changes in the landscape, involved what was virtually a straight north and south course across the peninsula and an entirely new terminal, at Port Weller on Lake Ontario.

In 1959 the St. Lawrence Seaway was opened and the Welland Canal (hitherto administered successively by the Department of Railways and Canals and the Department of Transport) continued to be improved and expanded, notably by the Welland By-Pass Channel which was opened in 1973.

Looking back over the long history of the Welland, which is one of constant struggle against massive forces of nature, there were times when it must have seemed to the engineers that they would never succeed. Doubtless there was no lack of voices to shout that it could never be done. Much of the credit is due to William Hamilton Merritt and it is pleasant to recall that, unlike many innovators, he lived to see the results of his labours and perhaps to foresee what might eventually develop. He died in 1862 while returning from Montreal to his home at St. Catharines. Fittingly enough he was a passenger in the steamboat *Champion* when he died, "a short distance above Dickinson's Landing" to quote the Toronto *Globe,* and his last sight of this world was the St. Lawrence Canals which he had done so much to build.



Construction of the Welland Ship Canal in 1914. Steam engines, mules and manpower illustrate the transitional stage between the canal diggers and modern, earth moving, machinery.

Le Canal Welland

par

Thomas E. Appleton

Lorsque le gouverneur Simcoe a, dans un moment de nostalgie, baptisé le ruisseau Chippawa du nom de "Welland" en souvenir d'une rivière anglaise, il lui était difficile d'y voir la voie navigable artificielle qui permettrait un jour aux navires de franchir l'escarpement de Niagara. Cette arête accidentée, chevauchée à l'époque par un difficile portage traversant la dénivelation de 326 pieds entre le lac Ontario et le lac Érié, constituait le plus formidable obstacle entre le vieux Canada et les nouvelles terres de l'ouest. On a eu recours à divers moyens pour le vaincre mais, comme ils dépendaient tous de la force humaine ou animale, pas un ne convenait vraiment, même pour l'époque.

Du vivant de Simcoe, le Haut Canada commence à sortir de l'état sauvage. Dans les années 1800, les établissements sont rares, la population éparse. L'absence d'argent ne permet guère à la situation de s'améliorer. L'économie de frontière, bien que prospère pour les gens résolus, n'offre aucun accès aux marchés et aux sources d'approvisionnements nécessaires à la vie d'un village. Étant donné l'absence de routes et chemins de fer, les marchandises lourdes ne peuvent être transportées que par des goélettes sur les Grands lacs, et par des bateaux à fond plat sur les rivières. Même si ces voies navigables sont parfois reliées entre elles (il y a ici et là un certain nombre de petits canaux) il faut nécessairement qu'elles aboutissent à l'une ou à l'autre des deux grandes voies navigables continentales, le Saint-Laurent ou l'Hudson. Avec l'ouverture du canal Érié en 1825, les États-Unis établissent une liaison entre les régions agricoles de l'ouest et le port de New-York en transbordant, à Buffalo, le chargement des goélettes dans des péniches.

Heureusement pour le Canada, les premiers colons de la péninsule du Niagara ont à peu près les mêmes ambitions que leurs voisins du Sud. Beaucoup sont des loyalistes originaires de New-York, du New-Jersey et de la Pennsylvanie et ont l'habitude des rigueurs de la vie en Amérique du nord. Après s'être battus pour leurs convictions une seconde fois pendant la guerre de 1812, ils apportent à la province du Haut Canada un peu de l'imagination et du dynamisme, hérités de leurs ancêtres du Sud. Se distinguant parmi ces gens énergiques, William Hamilton Merritt devient l'élément moteur de la construction du canal Welland et le père du transport dans les eaux intérieures du Canada.

Merritt comprend la menace que représente le canal Érié bien avant son ouverture, surtout lorsque les Américains expriment l'intention de le compléter par le canal Oswego qui devait relier le lac Érié au réseau navigable de New-York. En vertu d'une loi, la majorité du commerce avec les colons britanniques doit à l'époque emprunter cette voie d'eau incommode, peu profonde et pénible menant à Montréal en passant par les rapides du St-Laurent. Il s'agit là d'une sérieuse entrave à la survie des provinces qui ne peut pas être tolérée indéfiniment. Pour éviter l'étouffement, il faut améliorer la route canadienne en aménageant des canaux. Cette idée, dont les implications financières étaient, pour l'époque, comparables à celles des projets de la Baie James ou de Churchill Falls, trouvera écho au fil des années: en 1832 c'est l'ouverture du canal Rideau; en 1840, celle des canaux du St-Laurent; en 1845, l'achèvement de l'écluse canadienne à Sault Ste-Marie et, plus récemment, l'aménagement de la voie maritime du St-Laurent.

Après avoir étudié le tracé de l'itinéraire, le premier problème de Merritt est de rassembler des fonds pour la compagnie du canal Welland qui, en 1824, est constituée en société dans la province du Haut Canada. Même s'il voit la nécessité d'avoir une route canadienne, Merritt est plutôt un homme d'affaires qu'un nationaliste aveugle. Pour financer la construction du canal il est prêt à aller chercher de l'argent n'importe où, auprès d'actionnaires canadiens, britanniques ou américains. Finalement, malgré les efforts héroïques de la compagnie, c'est la crise financière, douloureuse, qui ne se dénoue que grâce à l'octroi d'une aide financière par la Couronne et la province.

Les problèmes techniques ne sont pas moins épineux. Merritt est le principal promoteur du projet de canal mais il n'est pas président de la compagnie. C'est son ami George Keefer, avec qui il avait étudié la route du ruisseau Chippawa en 1818, qui occupe ce poste. Également loyaliste, ce dernier a lui aussi participé à la défense de la Péninsule du Niagara lors de l'invasion américaine de 1812. Keefer, dont les fils Samuel et Thomas figurent parmi les fondateurs de la profession d'ingénieur au Canada prend la direction pratique des travaux du canal Welland et donne le premier coup de pioche en 1824.

Le premier canal Welland est inauguré en 1829 par deux petites goélettes, l'une canadienne et l'autre américaine. Éclusées au niveau du lac Ontario à Port Dalhousie, elles franchissent l'escarpement pour aboutir dans la rivière Welland (ruisseau Chippawa). À partir de ce point, elles rallient la rivière Niagara à environ deux milles au-dessus des chutes et pénètrent ensuite dans le lac Érié. Il faut cinq années de dur labeur pour creuser ce canal à la pelle et à la pioche dans de l'argile tenace. Les 39 écluses primitives n'ont qu'une hauteur de huit pieds sur radier et le sas est garni de bois. À cette même époque, le canal Rideau est également en construction et le colonel By des "Royal Sappers and Miners" envoie un de ses hommes pour inspecter le canal Welland. L'ingénieur du colonel By, un écossais du nom de MacTaggart, fait des remarques quelque peu ironiques à propos des écluses en bois (celles du canal Rideau étaient en maçonnerie classique et elles sont encore là aujourd'hui) et il aurait déclaré que la débâcle du printemps les emporterait "comme des fétus de paille". Il avait presque raison mais, comme nous l'avons dit, Merritt et Keefer étaient en proie à des difficultés financières qui les obligèrent à restreindre les dépenses. Peut-être MacTaggart a-t-il été décontenancé d'apprendre que les écluses du canal Welland avaient environ deux pieds de profondeur de plus que le canal Rideau.

Très vite d'autres difficultés se présentèrent. Les rapides de la rivière Niagara sont dangereux pour la navigation et le canal doit être prolongé jusqu'au lac Érié, au niveau de l'actuel Port Colborne. Le canal d'alimentation qui approvisionne en eau les sas et permettait aux bateaux de franchir l'escarpement, pose également des problèmes. À l'époque, le canal commence à Dunnville, passe par les marais de Wainfleet et franchit la rivière Welland sur un aqueduc. Il finira par devenir, lui-même, une autre voie navigable. À la suite de ces divers changements, le second canal Welland apparaît comme une version remodelée du premier. En 1841, le gouvernement de la province du Canada achète le canal dans son intégralité, ce qui lui donne un essor considérable. Le bois des écluses a tôt fait d'être remplacé par le ciment et la profondeur est portée à 9 pieds.

Même si au départ, Merritt a financé le canal Welland grâce à de l'argent provenant de ce qu'on appelle aujourd'hui le "secteur privé", il est évident que seul le gouvernement pouvait passer à l'étape suivante de l'expansion qui, au cours de la seconde moitié du 18^{e} siècle consiste surtout à construire des voies ferrées et des canaux. Merritt se lance ensuite dans la politique (il siège successivement de 1832 a 1860 à la Chambre du Haut Canada et à celle de la province unie) et participe activement aux travaux des canaux du St-Laurent et à diverses constructions de voies ferrées et de ponts.

En 1848, lorsque les canaux du St-Laurent sont achevés, le canal Welland est déjà dépassé et, en 1870, le gouvernement décide de modifier le gabarit du canal pour qu'il puisse accueillir tous les navires susceptibles d'emprunter les voies d'eau intérieures. La longueur des écluses est donc portée à 270 pieds et la profondeur à 12 pieds. Ces améliorations donnent naissance au troisième canal Welland qui, en 1887, a une profondeur de 14 pieds et suit un itinéraire plus direct entre l'escarpement de Niagara et Port Dalhousie sur le lac Ontario.

En 1907 débutent les travaux de planification du quatrième canal Welland, souvent appelé le canal navigable Welland. Bien que le canal ait toujours été navigable, les seuls navires qui pouvaient, jusqu'à cette époque, l'emprunter étaient

des petites goélettes et des bateaux à vapeur. Mais ces derniers étaient devenus depuis longtemps trop petits pour être rentables et pouvaient difficilement être considérés comme des navires à part entière, face à la génération montante des navires des Grands lacs. Survint la "grande guerre" qui retarde considérablement la construction, mais lorsque le quatrième canal accueille les premiers navires en août 1932 (l'inauguration a lieu en 1930) il est, de l'avis de tous, reconnu comme le plus grand ouvrage de génie civil du monde et une étape marquante du progrès de la technologie canadienne. Le passage du plus grand navire des Grand lacs, le navire à vapeur *Lemoyne,* transportant 530,000 boisseaux de blé avec un tirant d'eau de plus de 19 pieds, marque cet événement. Pour reprendre la publicité de l'époque, il s'agit en effet "d'une construction canadienne, d'une réalisation canadienne" qui, parmi les autres modifications qu'elle apporte au paysage, constitue une voie nord-sud pratiquement rectiligne en travers de la Péninsule vers un point d'aboutissement entièrement nouveau, à Port Welland sur le lac Ontario.

En 1959, la Voie maritime du St-Laurent est ouverte et le canal Welland (par la suite placé successivement sous la tutelle du ministère des Transports) continua a être amélioré et agrandi, notamment par le canal de dérivation Welland qui ouvre en 1973.

Si l'on se penche sur la longue histoire du canal Welland, qui fut celle d'une lutte de chaque instant contre toutes les forces de la nature, on peut s'imaginer que, parfois, les ingénieurs ont dû penser qu'ils n'atteindraient jamais leur but. Certes, les défaitistes ne manquaient pas. Tout l'honneur revient en grande partie à William Hamilton Merritt et il est agréable de rappeler que, contrairement à de nombreux navigateurs, il a pu voir les résultats de son oeuvre et prévoir peut-être la forme qu'elle revêtirait finalement. Il mourut en 1862 en revenant de Montréal à son domicile de Sainte-Catherine. Étrange coïncidence, il voyageait à bord du bateau à vapeur *Champion* lorsque qu'il s'éteignit à quelques pieds au-dessus de "Dickinson's Landing" pour citer le *Toronto Globe,* et son dernier regard a été pour les canaux du St-Laurent auxquels il avait tant consacré de sa vie.



Port Dalhousie en 1885. On peut voir a l'arrière plan le *James G. Worts* de Toronto, goélette construite en 1874. Comme tous les bateaux des Grands lacs, construits avant ou après cette date, le *Worts* a été conçu pour contenir le maximum de marchandises. On remarquera les sabords montés sur charnières, ménagés dans les arcasses supérieures et inférieures pour charger les longues pièces de bois. Les durs travaux de ponts étaient facilités par la présence d'une chaudière auxiliaire couplée à un treuil à vapeur (babord avant) utilisé pour amener les voiles et l'ancre.

Lifeline to Safety -the Emergency Locator Transmitter -ELT

by

John Richards

Up from the wreckage, up through the trees, and up into the atmosphere flashes a pulsing, strange-sounding, warbling signal. Its call on the international distress frequency 121.5 mHz announces to anyone within 100 miles that an aircraft is down...

An injured man sits on the snow close to a small fire, huddled in a makeshift shelter of aircraft panels. Dazed by his injury, he is trying to stay warm. A few hours before, he had climbed into his aircraft expecting to make another routine flight over the rugged terrain. A bad blunder – attempting to continue into deteriorating weather – had been salvaged by a minor miracle after he had lost control of the aircraft and survived the crash into a forest shrouded in cloud.

Lots of food in the frozen wreckage and a chainsaw with fuel gave promise of relieving the rigours of survival. But he is now helpless because his wound dispirits him to such an extent that he abandons any expectation of surviving. In this state of mind his life expectancy is a scant 36 hours...

However, the pilot had done one thing which saved his life. He carried an ELT which he switched on and set on a stump. Guided by the ELT signal, search and rescue aircraft pinpointed the snow-covered crash site within a few hours and flew him to medical aid the next day.

Saved from certain death by a little "black box"...



Today, this flyer's rescue experience is being repeated as the ELT comes into use. Canada's military Search and Rescue (SAR) organization now has the tool with which to find aircraft the electronic way, whereas previously the human eye was the only detection device. Impressive as the SAR record has been – over 90% successful – the time factor was unacceptable. With an average time-to-rescue of 85 hours, survivors were exposed to many adversities while long, elaborate and costly searches continued.

Electronic searches began in earnest in World War II. Downed flyers were a valuable war resource; also, for morale reasons, effective rescues had to be assured. This led to the introduction of the ancestor of the ELT – the famous

Gibson Girl – a hand-cranked transmitter beacon. The Canadian Armed Forces were equipped with Sarah (search and rescue and homing) until a few years ago when a personal locator beacon was introduced. Meanwhile, the interdepartmental MOT/DND Search and Rescue Committee was seeking ways to introduce a small, inexpensive device which could protect civil aircraft. The United States and Canada, being huge countries, were pressing for this "missing link" in their search and rescue systems.

With every search that made the headlines came public expressions of humanitarian concern for the victims of the accident. Over the years, the SAR organization was understandably anxious to see the introduction of the device which they knew from military experience would strikingly improve their effectiveness. Out of these demands came a casual introduction of personal locator beacons being manufactured by various electronic firms who had the foresight to respond to an existing need.

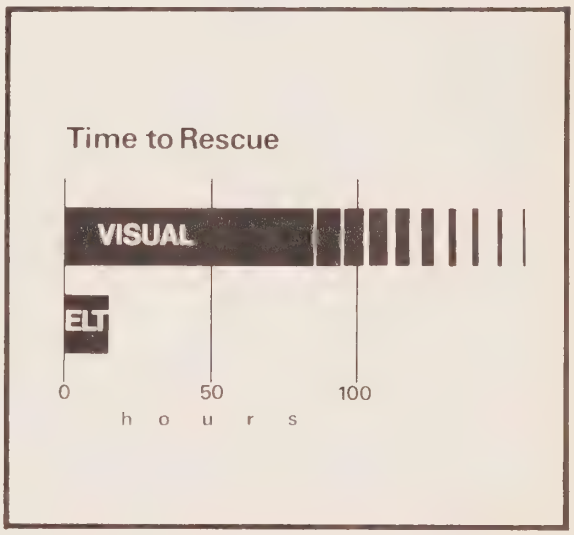
The widespread use of the early locator beacons, particularly in remote areas, established the feasibility of making mandatory the carriage of these devices. But there remained one stumbling block: reliability.

Since 8% of aircraft crashes are fatal to all on board, the beacon must automatically transmit following a crash. Also, the battery must produce energy in the coldest temperatures and for a period long enough to complete a search. And here's where the state of the art petered out. The challenge to industry was to develop a battery capable of releasing energy for 100 hours at 40 below.

The momentum of developments was given a big impetus early in 1972 when high-level officials of the MOT and DND agreed to establish a Task Force with the MOT as the department of primary responsibility. Its job: to develop a program leading to the compulsory use of ELTs in Canada. The Task Force deadline was stringent – made all the more so by the spectacular Martin Hartwell accident. Hartwell had been found after 32 days by searchers who picked up a weak signal from his locator beacon, underscoring the urgency of introducing the ELT.

One of the problems faced by this group was making the program acceptable to the aviation community. After all, aircraft owners were going to be obliged to spend about $200 for such an installation. As it turned out, the proposal ultimately received overwhelming support from the flying public who realized that it was in their best self-interest to carry this protection.

The overall public acceptance of the ELT came about through continued consultation. Flying groups were briefed on developments and later participated in the introduction of an acceptable Air Navigation Order which spelled out the details of the program. The objections which were voiced were primarily of the philosophical variety which rejects, on principle, compulsory measures. The other doubts which were expressed were based on the ineffectiveness of existing personal locator beacons which had successes – and failures.



In the latter phases of the ELT program, the Task Force turned its attention to its original terms of reference which included an extensive publicity compaign to enable all pilots to use the ELT properly and to its best advantage. It became concerned about the thousands of false alarms being experienced in the USA, which had already introduced the ELT. If false alarms were going to consume the equivalent resources saved in search operations, then the promise of substantial savings would be denied.

At this point, the regulatory sponsor of the ELT program joined forces with the Aviation Safety Division. The result was a rewriting of the search and rescue information circular which explains the various systems, and the creation of a 30-minute slide/sound presentation "Emergency Locator Transmitter". This has already been seen by hundreds of pilots who now have a clear understanding of how to use this little box – their lifeline to safety.

"Emergency Locator Transmitter"

"You're down...you're alive...and you're alone. Alone. Miles from nowhere. Hidden by the forest. Sure, you're alive, but that isn't everything — you've got to be RESCUED...Rescued...rescued...rescued..."

With this dramatic introduction against the background sound of an ELT's warble, the Aviation Safety Division's slide/sound presentation makes the point that rescue is the all-absorbing urge of the downed accident victim.

It explains what the ELT is, and how it is mounted in the aircraft and triggered off by G forces during a forced landing. There's a detailed coverage of the various aircraft used by the Search and Rescue Organization, their capabilities, and how crews respond to an ELT distress signal. There's an hour-by-hour breakdown of the unfolding of the search as each phase leads to another.

Emphasizing the pilot as the vital link in the three-part rescue system of ELT, search and rescue, and the pilot, the show illustrates two basic situations:

- an airborne pilot hears an ELT signal
- a pilot is downed.

On hearing an ELT there's an urgency to get the message to an Air Traffic Services unit and thence to the SAR people. Six hours is a typical time before a SAR aircraft is overhead the accident site; neither nighttime nor weather interferes with the initial electronic search to pinpoint the ELT.

The downed pilot is cautioned to be familiar with survival techniques and the show discusses whether or not to switch off the ELT if he's expected to be away for several days on an itinerary.

Pilots are reminded of the life-saving use to which their flightplans, flight notifications and flight itineraries are put. They contain vital evidence to indicate the area in which the aircraft is likely to be found.

To drive the point home, the second half of the presentation discusses in detail four actual aircraft accidents and how the ELT played its role. The final example tells of the total success of an unusually well-coordinated search and rescue which returned a pilot to medical aid within 100 minutes of his crash!

This presentation is the first of a number planned by the Aviation Safety Division to bring much-needed information to pilots. It's said that a pilot's mistakes are something for which he may be severely punished. Although the ELT's worth may be somewhat "after the fact", it can still extricate him from the ultimate punishment of being lost and not found.



Pour se sortir d'un mauvais pas la radiobalise de secours (ELT)

par John Richards

S'élevant de l'épave, traversant les arbres, un signal aux étranges tonalités grisollantes rayonne par intermittence rythmée dans l'atmosphère. Sur 121.5 mHz, la fréquence internationale de détresse, son appel fait savoir à quiconque se trouve dans un rayon de 100 milles qu'un aéronef a été contraint d'atterrir...

Un homme blessé est assis dans la neige, blotti auprès d'un petit feu dans un abri de fortune fait d'éléments de son avion. Hébété sous l'effet de sa blessure, il essaie de se tenir au chaud. Quelques heures auparavant il avait pris place à bord de son appareil, comptant bien effectuer une nouvelle fois un vol sans histoire au-dessus du relief accidenté. Son salut, il le doit à une sorte de miracle alors que s'étant efforcé — grossière erreur — de poursuivre son vol quand le temps se gâtait, il avait perdu la maîtrise de son avion; ayant survécu à l'écrasement, il se retrouvait dans une forêt voilée de nuages.

L'épave glaciale contenait de la nourriture en abondance, ainsi qu'une scie à chaîne et du carburant, ce qui permettait d'atténuer les rigueurs de cette épreuve de survie. Mais il est maintenant réduit à l'impuissance parce que sa blessure le désepère au point qu'il abandonne tout espoir de survie. Dans cet état d'esprit son espérance de vie se réduit à 36 heures...

Le pilote, cependant, avait fait une chose qui lui sauva la vie. Il avait emporté une radiobalise de secours qu'il brancha et posa sur une souche. Ce fut l'affaire de quelques heures pour que, guidé par la radiobalise de secours, un appareil du Service de recherche et de sauvetage repère, avec précision, les lieux de l'accident que recouvrait la neige. Le lendemain il revenait pour apporter une aide médicale. Le rescapé avait été sauvé d'une mort certaine par une petite "boîte noire"...

Aujourd'hui, cette expérience de sauvetage des aviateurs se répète du fait de la mise en service de la radiobalise de secours. L'organisation militaire canadienne de recherche et de sauvetage (SAR) possède maintenant un outil lui permettant de trouver un aéronef grâce aux ressources de l'électronique, alors que l'oeil humain constituait précédemment le seul moyen de détection. Aussi impressionnant que soient les résultats obtenus par l'Organisation de recherche et de sauvetage — plus de 90% de succès — la durée de la recherche n'en constituait pas moins un élément inacceptable. De l'ordre de 85 heures, elle laissait les rescapés aux prises avec de nombreuses causes d'adversité tandis que se poursuivaient des recherches longues, compliquées et coûteuses.

C'est pendant la seconde guerre mondiale qu'on commenca à appliquer sérieusement les possibilités de l'électronique à la recherche des disparus. Les aviateurs abattus constituaient une précieuse ressource de guerre; de plus, pour des raisons d'ordre moral, il importait de mener à bien les opérations de sauvetage. C'est ce qui donna lieu à la mise en service de l'ancêtre de la radiobalise de secours — la fameuse Gibson Girl des Américains, la "moulinette" comme disaient les Francais — un émetteur qu'on faisait fonctionner en tournant une manivelle. Jusqu'à ce que, voici quelques années, on les équipe d'une radiobalise localisatrice personnelle, les militaires canadiens disposaient de la radiobalise SARAH, prénon féminin dont chaque lettre est l'initiale des mots *Search and rescue and homing,* signifiant "recherche et sauvetage et ralliement". Pendant ce temps, le Comité interministériel de recherche et de sauvetage du MDT et du MDN recherchait les moyens de protéger les aéronefs civils en les dotant d'un dispositif de faible encombrement et d'un prix abordable. Les aviateurs abattus constituaient une précieuse ressource de guerre; de

plus, pour des raisons d'ordre moral, il importait de mener à bien les opérations de sauvetage. C'est ce qui donna lieu à la mise en service de l'ancêtre de la radiobalise de secours — la fameuse Gibson Girl des Américains, la "moulinette" comme disaient les Francais — un émetteur qu'on faisait fonctionner en tournant une manivelle. Jusqu'à ce que, voici quelques années, on les équipe d'une radiobalise localisatrice personnelle, En raison de l'immensité de leurs territoires, les États-Unis et le Canada insistaient pour que ce moyen de liaison avec les aviateurs portés disparus serve de fil d'Ariane en cas d'opérations de recherche et de sauvetage.

Chacune des recherches qui faisaient les manchettes de la presse suscitait la compassion du public pour les victimes de l'accident. Au fil des années, l'Organisation de recherche et de sauvetage se montra comme on peut le comprendre désireuse de voir introduire le dispositif dont elle savait, par l'expérience des applications militaires, qu'elle pourrait remarquablement améliorer son efficacité. Sous la pression de ces exigences, on en vint à introduire les radiobalises localisatrices personnelles, construites par diverses sociétés de production de matériel électronique qui avaient eu le flair de donner utilement suite à un besoin qui se faisait sentir.

L'usage répandu des premières radiobalises localisatrices, en particulier dans les régions reculées, montra qu'on pouvait obliger les intéressés à se munir de ces dispositifs. Mais on achoppait encore sur un point: la fiabilité.

Puisque 8% des accidents d'aviation causent la mort de tous les passagers des appareils en perdition, la radiobalise doit émettre automatiquement à la suite d'un écrasement. D'autre part, la batterie doit pouvoir produire de l'énergie par les températures les plus basses et ce, pendant une période suffisamment longue pour permettre l'aboutissement des recherches. Et c'est là où la technologie s'est trouvée en défaut. Le défi auquel l'industrie devait faire face consistait à mettre au point une batterie capable de libérer de l'énergie pendant 100 heures à une température de 40 degrés sous zéro.

L'ardeur qui présidait à ces mises au point recut une vigoureuse impulsion au début de 1972, lorsque des hauts fonctionnaires du MDT et MDN se mirent d'accord pour constituer un groupe de travail dont le ministère des Transports devait assumer la responsabilité essentielle; sa mission consistait à mettre au point un programme devant déboucher sur l'emploi obligatoire des radiobalises de secours au Canada. Le temps imparti à l'équipe de travail fut parcimonieusement limité, ce à quoi contribua le spectaculaire accident de Martin Hartwell. Les chercheurs avaient trouvé ce dernier après 32 jours d'efforts grâce au faible signal qu'ils purent capter en provenance de sa radiobalise localisatrice, ce qui soulignait l'urgente nécessité de mettre une radiobalise de secours à la disposition des pilotes.

L'un des problèmes auquel ce groupe eut à faire face consistait à faire accepter le programme par le monde de l'aviation. Après tout, les propriétaires d'aéronefs allaient être obligés de dépenser environ $200 pour une telle installation. En l'occurrence, la proposition recut finalement un appui presque unanime de la part des navigants qui comprirent la nécessité de se munir de ce moyen de protection.



L'accueil favorable que l'ensemble du public réserva à la radiobalise de secours fut la conséquence de consultations continuelles. Les groupements d'aviateurs furent tenus au courant de l'évolution des travaux et, ultérieurement, participèrent à la mise au point d'une ordonnance sur la navigation aérienne définissant de manière acceptable les détails du programme. Les objections exprimées s'inspiraient essentiellement du concept "philosophique" qui s'oppose par principe aux mesures de caractère obligatoire. D'autres arguments empreints de scepticisme furent invoqués quant à l'inefficacité des radiobalises localisatrices personnelles existantes, qui n'avaient pas toujours donné satisfaction.

Dans les dernières phases du programme relatif aux radiobalises de secours, l'équipe de travail fit porter son attention sur les conditions relatives à la nécessité d'une compagne publicitaire de grande envergure visant à montrer à tous les pilotes comment se servir convenablement de ce dispositif au mieux de leurs intérêts. Les milliers de fausses alertes qui s'étaient produites

aux États-Unis, où la radiobalise de secours avait déjà été introduite, étaient un sujet de préoccupation. Si les fausses alertes devaient consommer des ressources équivalentes à celles qu'on avait épargnées au titre des opérations de recherche, la perspective de réaliser des économies substantielles ne se réaliserait pas.

C'est à ce moment que la personne responsable du règlement dans le cadre du programme de réalisation des radiobalises de secours a fait cause commune avec la Division de la sécurité aéronautique. De cette coopération résulte le remaniement du texte des circulaires d'information qui expliquent le fonctionnement des divers systèmes et la réalisation d'une présentation audio-visuelle avec diapositives d'une durée de 30 minutes sur le thème "radiobalise de secours". Elle a déjà été présentée à des centaines de pilotes, qui comprennent aujourd'hui sans ambiguïté la manière d'utiliser cette petite boîte pour se sortir d'un mauvais pas.

"Radiobalise de secours"

"vous êtes au sol... vous êtes vivant... et vous êtes seul. À des milles de nulle part. Dissimulé dans la forêt. Bien sûr, vous êtes vivant, mais ce n'est pas tout: il faut que vous soyez SAUVÉ...sauvé...sauvé...sauvé..."

Au moyen de cette introduction de caractère théâtral avec, en bruit de fond, le son grisollant d'une radiobalise de secours, la présentation audio-visuelle avec diapositives de la Division de la sécurité aéronautique met en évidence le fait que le rescapé d'un accident d'aviation est tout entier absorbé par la perspective du sauvetage.

Cette présentation explique ce qu'est une radiobalise de secours, comment celle-ci est installée dans l'aéronef et comment elle peut se déclencher sous l'effet des forces d'accélération qui se produisent au cours d'un atterrissage forcé. Cette présentation décrit en détail les divers aéronefs utilisés par l'Organisation de recherche et de sauvetage, et montre leurs possibilités et la manière dont ses équipages réagissent à l'audition d'un signal de détresse provenant d'une radiobalise de secours. Elle montre heure par heure le déroulement des opérations de recherche et comment chaque phase de celles-ci débouche sur la phase suivante.

Insistant sur le rôle vital que joue le pilote lui-même dans le système de sauvetage à trois éléments que constitue le radiobalise de secours, l'Organisation de recherche et de sauvetage, et enfin le pilote, le spectacle illustre deux situations essentielles:

- un pilote en vol entend un signal provenant d'une radiobalise de secours
- un pilote est au sol après s'être posé "en catastrophe".

Au moment où l'on entend le signal provenant d'une radiobalise de secours, il est urgent d'en rendre compte à un organe des Services de la circulation aérienne qui se chargera d'alerter le personnel de l'Organisation de recherche et de sauvetage. Il faut en moyenne six heures pour qu'un appareil de recherche et de sauvetage se trouve au-dessus des lieux de l'accident; ni l'obscurité ni les conditions météorologiques n'empêchent de repérer avec précision l'emplacement de la radiobalise de secours qui permet de réaliser électroniquement la phase initiale de recherche.

On attire l'attention du pilote contraint à un atterrissage "en catastrophe" sur la nécessité de bien connaître les techniques de survie et la présentation traite de la question de savoir s'il y a ou non lieu de débrancher la radiobalise de secours si l'on doit partir pendant plusieurs jours sur un certain itinéraire.

On rappelle aux pilotes que le dépôt de plans de vol, d'avis de vol ou d'itinéraires peut leur sauver la vie. Ces documents contiennent des indices essentiels à la détermination de la région dans laquelle on a le plus de chance de retrouver leur appareil.

Revenant au vif du sujet, la seconde partie de la présentation aborde dans le détail le cas de quatre accidents d'aviation et montre comment la radiobalise a joué son rôle. Le dernier exemple dont il est question indique de quelle manière une opération de recherche et de sauvetage exceptionnellement bien coordonnée a été entièrement couronnée de succès en permettant d'assurer une assistance médicale à un pilote dans les 100 minutes qui ont suivi son accident!

Cette présentation est la première d'une série que la Division de la sécurité aéronautique envisage de mettre au point pour donner aux pilotes les renseignements dont ils ont le plus besoin. On dit que les erreurs d'un pilote peuvent valoir à celui-ci une punition sévère. Bien que l'intérêt d'une radiobalise de secours tienne plus à sa possibilité de "guérir que de prévenir" c'est encore ce moyen qui peut soustraire au pire châtiment: être perdu sans espoir de salut.

Transcan mini-reportages

Safety Short Wins Award

MOT's animated snowmobile television commercial recently was awarded first prize in the Health and Safety category at the U.S. Television Commercials Festival at Bellwood, Illinois.

The Public Affairs commercial, issued two years ago and used frequently by television stations throughout Canada, was prepared by the animation department of the National Film Board. It depicts the short and desperate career of a faulty snowmobile and its careless driver. Its comic style carries the serious message that any suspected design-based safety hazards in a snowmobile should be reported to Transport Canada's Road Safety Branch for investigation and necessary action.

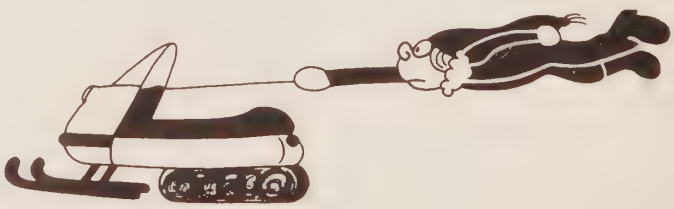


Un premier prix pour la sécurité



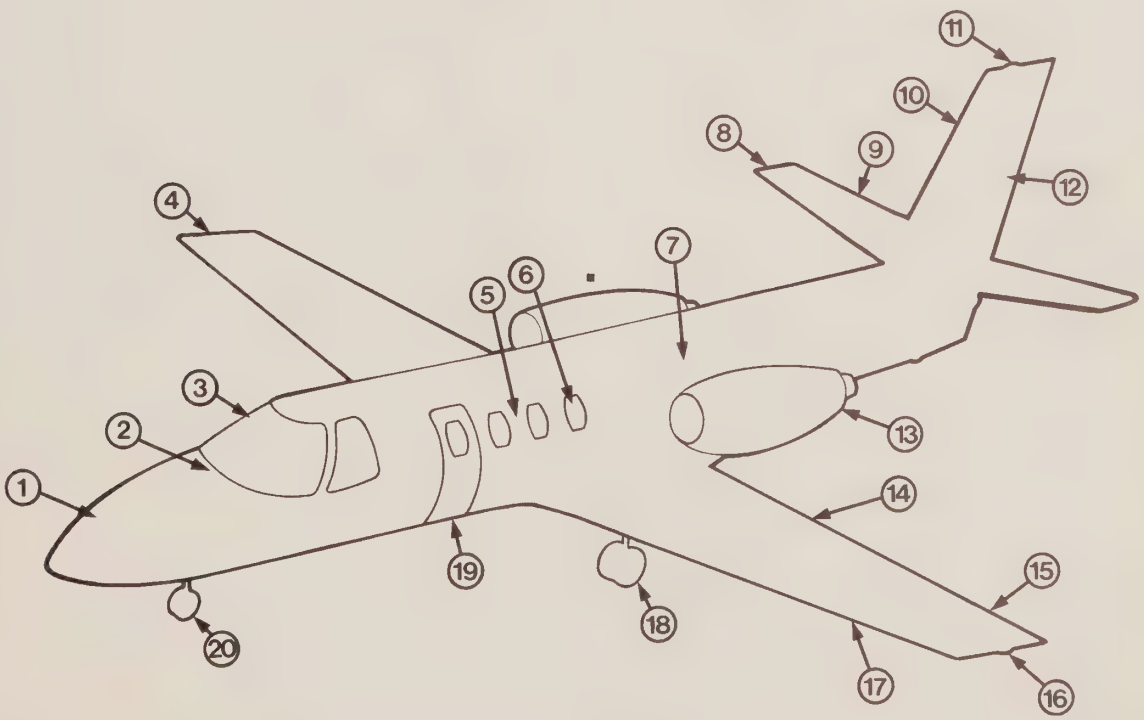
Le dessin animé publicitaire du MDT conçu pour la télévision et traitant de la motoneige a reçu récemment le premier prix au Festival américain de la publicité télévisé de Bellwood (Illinois), catégorie "Santé et Sécurité".

Cette publicité d'intérêt public, produite il y a deux ans et présentée fréquemment par les stations de télévision dans tout le Canada, a été conçue par le service d'animation de l'Office national du film. Elle nous raconte la brève et terrible carrière d'une motoneige en mauvais état et de son conducteur imprudent. Ainsi, malgré des dehors comiques, cette publicité nous lance un appel sérieux: tout défaut de fabrication d'une motoneige risquant de compromettre la sécurité de ses passagers doit être signalé à la Direction de la sécurité automobile et routière pour qu'il y ait enquête et que les mesures nécessaires soient prises.



POUR VOUS AND ME

1.	Cowl	Capot
2.	Avionics	Équipement de bord
3.	Flight Station	Poste d'équipage
4.	Wing Tie	Saumon d'aile
5.	Cabin	Cabine
6.	Cabin Window	Hublot de cabine
7.	Fuselage	Fuselage
8.	Horizontal Stabiliser	Empennage horizontal
9.	Elevator	Gouverne de profondeur
10.	Vertical Stabiliser	Empennage vertical
11.	Anti-Collision Light	Feu anticollision
12.	Rudder	Gouverne de direction
13.	Jet Engine	Réacteur
14.	Flap	Volet
15.	Aileron	Aileron
16.	Navigation Light	Feu de position
17.	Wing	Aile
18.	Main Landing Gear	Train d'atterrisseage principal
19.	Cabin Access Door	Porte d'accès à la cabine
20.	Nose Landing Gear	Train d'atterrissage



THE "GHOST" SIGN

Mr. R.G. Smith, Manager, Maintenance and Engineering, at the Toronto International Airport is looking for an explanation of the following phenomenon.

For three years a wooden bookcase, with a stencilled red Government identification on the back of it, stood one inch from a painted metal partition in a room with constant fluorescent light. When the four-foot-high bookcase was moved from the central maintenance workshop the mirror image in red was found on the partition, less defined than the original but indelible. Another sign in red lettering on the same bookcase did not transfer.

Is there a scientific Sherlock Holmes out there?

IMAGE INSOLITE

M. R.G. Smith, directeur de l'Entretien et de la mécanique à l'aéroport international de Toronto, cherche une explication au phénomène suivant:

Pendant trois ans une bibliothèque en bois portant au dos un numéro d'identification du gouvernement peint en rouge s'est trouvée à un pouce d'une cloison en métal peint, dans une pièce éclairée en permanence par des tubes fluorescents. Lorsqu'on l'enleva de l'atelier central d'entretien, son image inversée en rouge est restée imprimée sur la cloison métallique, moins définie que l'original, mais indélébile. D'autres lettres rouges inscrites sur la même bibliothèque n'ont laissé aucune trace.

Y aurait-il un Sherlock Holmes à l'esprit scientifique pour percer cette énigme?

K.H. Simpson, Director of the new Airport Marketing Branch, Airports and Construction Directorate, attended C.A.T.A.'s first national Marketing Conference January 1975 in Ottawa. Mr. Simpson (right) is discussing the agenda with Hugh Devitt, Toronto airport manager, in company of Mrs. Florence Nelson, Western Region Marketing and Mr. Dale Clark, Pacific Region Marketing.

M. K.H. Simpson, directeur du nouveau service de marketing, direction des aéroports et de la construction, a assisté à la première réunion nationale de marketing de l'ACTA qui s'est tenue à Ottawa en janvier 1975. M. Simpson (à droite) discute du programme avec M. Hugh Devitt, gérant de l'aéroport de Toronto. Il est accompagné de Mme Florence Nelson du service du marketing de la région de l'Ouest, et de M. Dave Clark, du service du marketing de la région du Pacifique.



MEDAL OF BRAVERY

The Star of Courage, Canada's second highest decoration for bravery, was awarded to Constables J.A.C.M. Guilbault, J.J.A.Y. Beaudoin and J.Y. Audet of the National Harbours Board Police in Montreal. These men successfully stopped an attempted suicide by a distraught man who had climbed up the girders of the Jacques Cartier Bridge with the intention of jumping.

COURAGE RÉCOMPENSÉ

La médaille du courage, qui est la seconde décoration canadienne en importance pour la bravoure, a été décernée aux agents J.A.C.M. Guilbault, J.J.A.Y. Beaudoin et J.Y. Audet de la police du Conseil des ports nationaux (Montréal). Ils ont empêché un homme désespéré de se jeter du haut de la travée du pont Jacques Cartier.

Suggestion Awards/Primes à l'initiative

Frank Moohs	Snelgrove, Ont.	$545.
John C. Harris	Rexdale, Ont.	180.
Jean-Paul Lévesque	Pointe-aux-Trembles, Qué.	125.
Alan J. Walton	Sault Ste. Marie, Ont.	105.
Frank Ryan	Ottawa, Ont.	90.
Masaki J. Kitagawa	Calgary, Alta.	50.
Denis Boucher	Dollard des Ormeaux, Qué.	30.

Supplementary Awards/Primes supplémentaires

Fred C. Keil	Ottawa, Ont.	$875.
Victor E. McMann	Vancouver, B.C.	500.

FIRE PREVENTION AWARD

On December 4, 1974, Mr. George Grimstad, Fire Chief at Prince George Airport, was presented with the CATA (Canadian Air Transportation Administration) Grand Fire Prevention Award by Mr. William Huck. Mr. Grimstad also received Honorable Mention from the Government of Canada as a recognition for an entry with "multi-building facilities".

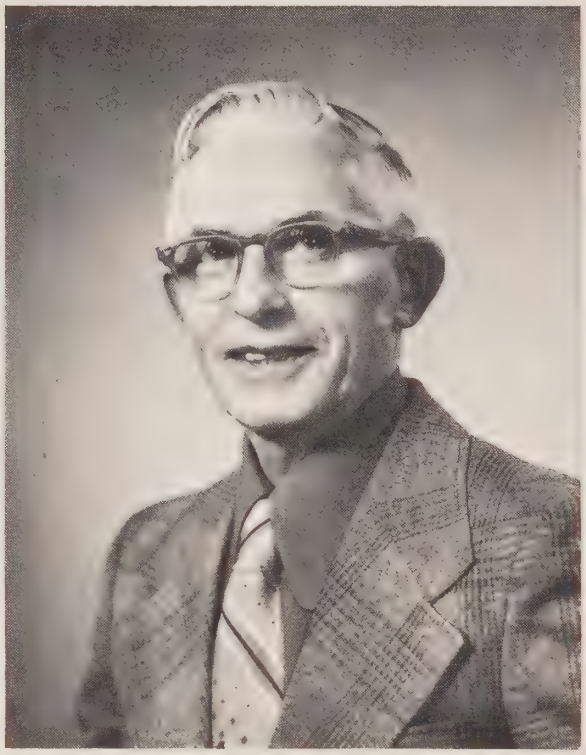
UN POMPIER À L'HONNEUR

Le 4 décembre 1974, M. George Grimstad, chef de la brigade des pompiers de l'aéroport de Prince George, s'est vu décerné le plus grand prix de prévention des incendies de l'ACTA. Le Gouvernement du Canada lui a également décerné une "mention honorable" pour marquer sa contribution dans le domaine des installations comportant plusieurs bâtiments.



Erin J. Brown, Telecommunications Area Manager for Western New Brunswick, retired in January after 37 years of service with the Ministry of Transport. Mr. Brown joined MOT in 1938 and served various stations in the Atlantic provinces and Quebec before becoming an electronic technician and subsequently Area Manager in 1954. A dinner and dance was held in St. John, New Brunswick, to honour Mr. Brown on the occasion of his retirement.

M. Erin J. Brown, gérant des Télécommunications pour la région de l'ouest du Nouveau Brunswick, a pris sa retraite en janvier dernier, après 37 ans de service au ministère des Transports. M. Brown a débuté au ministère en 1938. Il a travaillé dans diverses régions des Maritimes et du Québec avant d'être nommé technicien en électronique et par la suite gérant. M. Brown a été l'invité d'honneur à une réunion spéciale tenue à St-Jean.





Dr. Derek Scholfield, left, Chief of the Defence Research Establishment, Atlantic, is shown presenting an Award Certificate signed by Prime Minister Trudeau to V.J. Carmichael on his retirement, while Roy Levere, centre, Director of Administration, looks on. Mr. Carmichael joined the Air Radio branch of the Ministry of Transport in 1939.

M. Derek Scholfield (à gauche), chef de l'Établissement de recherche de la défense (Atlantique), remet un document signé par le Premier ministre, M. Trudeau, à M. V.J. Carmichael à l'occasion de son départ à la retraite. On peut voir également, au centre, M. Roy Levere, directeur de l'Administration.

Captain James Rose, Master of the Canadian Coast Guard Ship *Narwhal,* has retired after 20 years of service with the Ministry of Transport. At a retirement party in his honour, Captain Rose (centre) is shown receiving a MacAskill photograph from Captain Ivan Green (right), Regional Fleet Superintendent. Looking on is Captain Guy Williams, District Manager Dartmouth Marine Base.

Le capitaine James Rose, commandant du navire de la garde côtière *Narwhal,* a pris sa retraite après vingt ans de service au ministère des Transports.
Au cours de la réception organisée en son honneur, le capitaine James Rose (au centre) reçoit une photographie de MacAskill des mains du capitaine Ivan Green, surintendant régional de la flotte (à droite). On peut voir également le capitaine Guy Williams, directeur de district de la base maritime de Dartmouth.





Colleagues and friends gathered recently in Edmonton to honour E.W. (Eddy) Haigh (left) on his retirement after 30 years of service. He was presented with a watch by Russ Smith, Manager, Construction Services, Western Region.

Les amis et compagnons de travail de M. E.W. (Eddy) Haigh se sont réunis à Edmonton pour marquer le début de sa retraite après 30 ans de service à la fonction publique. M. Russ Smith, gérant, service de la construction, région de l'Ouest, lui a présenté une montre en guise de reconnaissance.

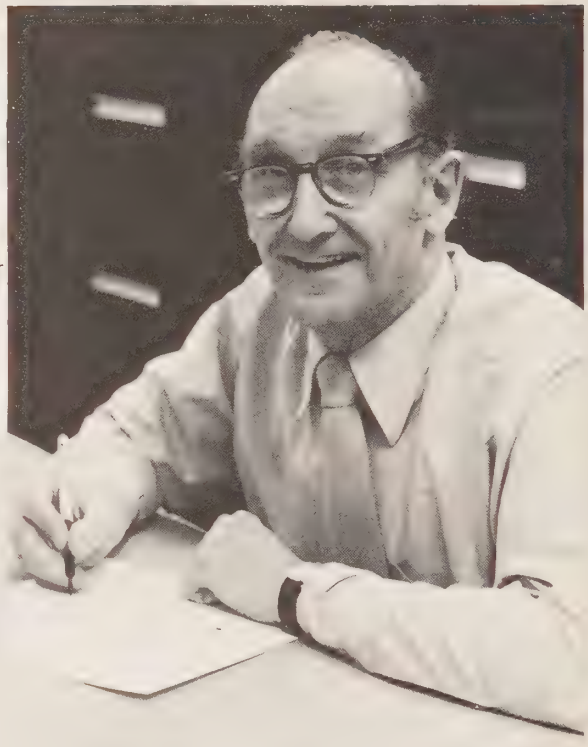
Captain James Thom began his career with the Ministry of Transport in June 1955 as Chief Officer on the CCGS *Alexander Mackenzie.* When Captain Thom retired he was with the Rescue Coordination Centre in Victoria, B.C.

Le capitaine James Thom a débuté sa carrière en juin 1955 au ministère des Transports comme premier officier sur le navire de la Garde côtière *Alexander Mackenzie.* Au moment de sa retraite il faisait partie du Centre de coordination des secours à Victoria (C.-B.).





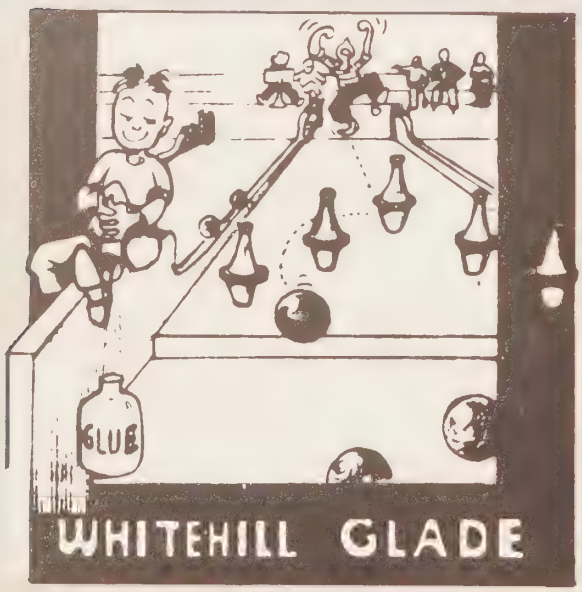




Tom Chaffey, one of the Ministry's favourite cartoonists, retired recently from the Project Management Branch. Before he moved into administration, Mr. Chaffey was an architectural draftsman in air terminal design. Here he is at his drawing board on the second floor of the Transport Canada Building shortly before his retirement.

M. Tom Chaffey, un des dessinateurs humoristiques les plus populaires du Ministère, a quitté récemment la Direction de la gestion des projets pour prendre sa retraite. Avant de devenir fonctionnaire, M. Chaffey était architecte et concevait des aérogares. On le voit ici, devant sa planche à dessin, au deuxième étage de l'immeuble "Transports Canada", peu avant son départ.








I've never seen a car
with only one seat belt before.
C'est la première fois
que je vois une banquette
avec une seule ceinture
de sécurité.
RAY
SOLE
75



Transports Canada

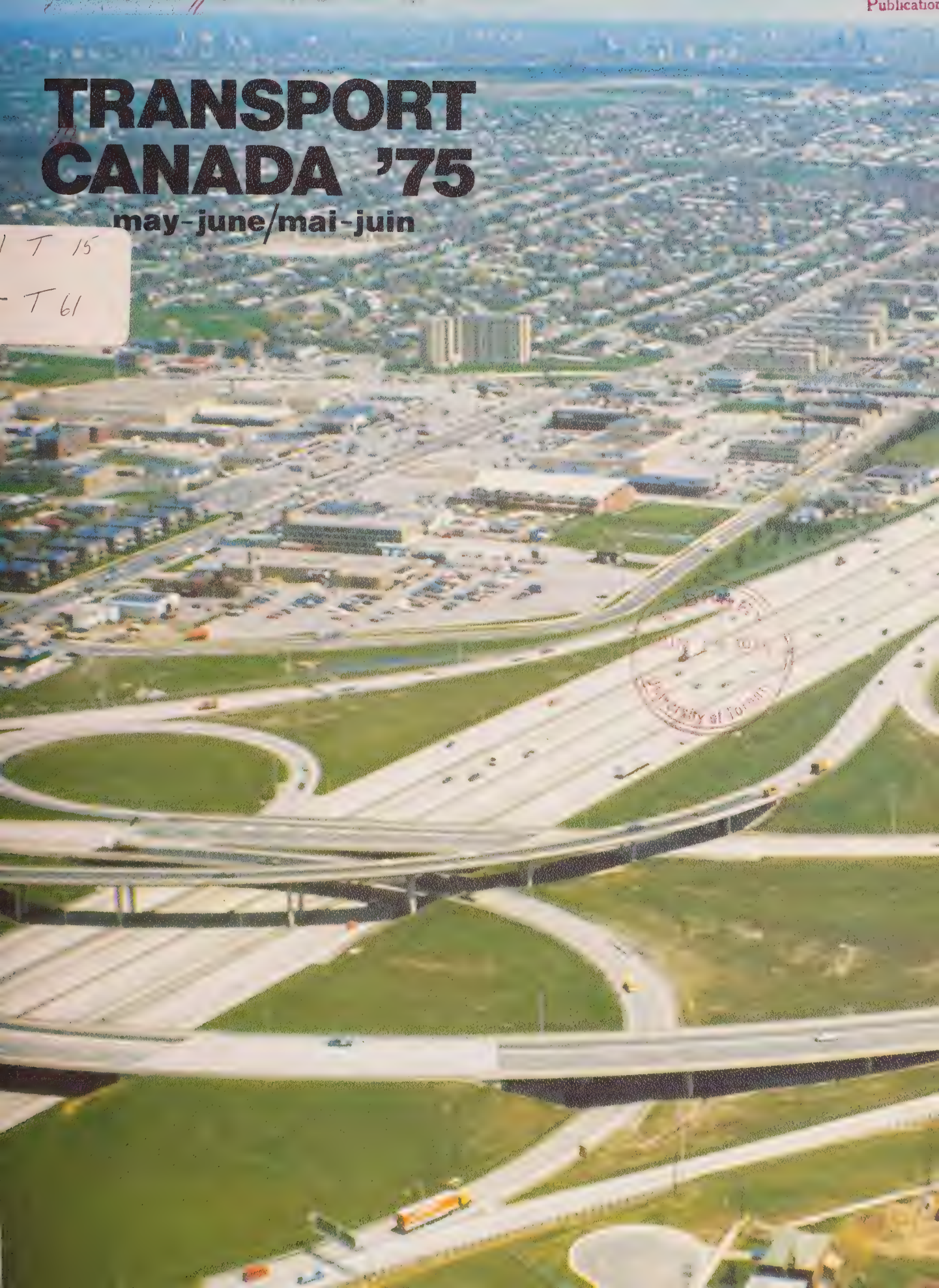
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CONTENTS/SOMMAIRE

FAREWELL MESSAGE
MESSAGE D'ADIEU 3

ENERGY AND TRANSPORT 4
ÉNERGIE ET TRANSPORTS 9

THE ARCTIC TRANSPORTATION AGENCY AND NORTHERN AIR POLICY 14

L'AGENCE DES TRANSPORTS DANS L'ARCTIQUE ET LA POLITIQUE DES TRANSPORTS AÉRIENS DANS LE NORD 17

LRC — TOMORROW'S TRAIN TODAY 20

BE SEEN 22

TRANSCAN/MINI-REPORTAGES 25

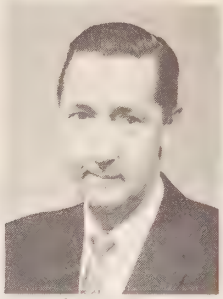
AWARDS/PRIMES 32

BIOGRAPHICAL NOTES
NOTES BIOGRAPHIQUES 36

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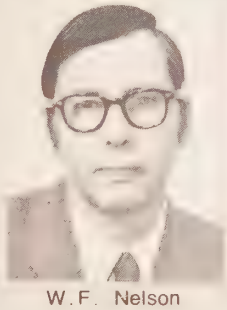

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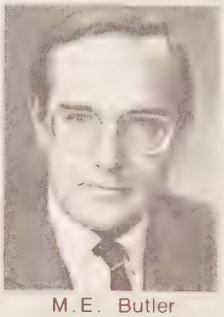

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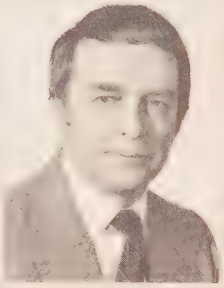

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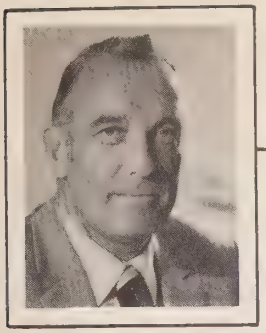

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FAREWELL MESSAGE from O.G.STONER
MESSAGE d'ADIEU du SOUS-MINISTRE

O.G. Stoner

I am happy that my last message in Transport Canada as Deputy Minister, Transport, coincides with the special issue on National Transportation Week.

As many of you are aware, the various aspects of transportation in this country are now increasingly reliant upon each other and are so linked that new policies are being developed to reflect this. The achievement of these represents the culmination of a progressive series of initiatives over the past decade.

The decentralization undertaken in the sixties by my distinguished predecessor John Baldwin followed by the development of the Ministry concept and new objectives in 1970, has led to intermodal coordination of transportation, federal-provincial cooperation in ensuring all regions are on an equal footing, development of transportation in the North, and the increasing strength of transportation as an integral part of the foundation of the Canadian economy.

However, transportation, as it has developed in Canada, is also a frame of mind which guides the work of this Ministry. The task of linking Canada east and west, north and south, requires the dedication that has given Canada one of the most efficient transportation systems in the world. We must also ensure that it moves with the times and that in particular new initiatives reflect the Government's long-term priorities, including protection of the environment.

Transportation is no longer only a question of how best to use the hardware available. Urban transportation, for instance, was once a matter of fitting a system of transportation to a city's needs and to a great extent this is still true today. However, because transportation is such a basic economic factor in the cities, planners are now designing communities to fit high quality transportation.

The work of the Policy Task Force led by Mr. Davey but to which all parts of the Ministry, and indeed our former Deputy Minister John Baldwin, have contributed so effectively will bring lasting and beneficial results to Canada and to Canadians, when after consultation with all interested groups and the approval of Parliament, it is implemented.

The job is two-fold. We must continue to develop more efficient methods and systems to utilize our transportation assets, and be ready to utilize new technologies which will contribute to an orderly development.

Equally, human resources must be employed as effectively as possible. It has been my determined conviction that we must strive to offer MOT employees exciting and well planned careers. Training policy must be rewarding and reassuring in human terms and effective in its long term results. To this end, I am equally confident that the Ministry of Transport Training Institute will bring a new and great dimension to the future of the transport work force. You will all be very proud of it as we have been proud to be associated with transportation in MOT. We can build new values for ourselves in the world of tomorrow through your dedication to improving transport for Canadians.

Thank you all for the tremendous job you have done during my tenure here – and the even more important work you will be called upon to perform in the future.

Je suis heureux que mon dernier message pour ce magazine, en tant que sous-ministre aux Transports, coïncide avec un numéro spécial sur la Semaine nationale des Transports.

Comme beaucoup d'entre vous s'en rendent compte, les liens entre les divers secteurs du transport au Canada se resserrent graduellement, de telle sorte que de nouvelles politiques doivent être élaborées en fonction de cette interdépendance. La réalisation de ces politiques constitue le point culminant d'une série de progrès accomplis au cours de la dernière décennie.

La décentralisation amorçée pendant les années soixante par mon distingué prédécesseur Jean Baldwin, suivie, en 1970, par la mise au point du concept et des nouveaux objectifs ministériels ont permis l'organisation intermodale du transport, la collaboration fédérale-provinciale dans le respect des droits d'égalité pour toutes les régions, l'amélioration des transports dans le Nord et le raffermissement de la position des transports en tant que partie intégrante du fondement de l'économie canadienne.

Mais la question des transports, telle qu'elle s'est développée au Canada, est aussi un état d'esprit dont le Ministère s'inspire dans ses travaux. La tâche de relier tous les points du Canada d'est en ouest et du nord au sud, exige le genre de dévouement qui nous a donné l'un des réseaux de transport les plus efficaces au monde. Le Ministère doit également veiller à ce que ce réseau évolue et, en particulier, à ce que les nouveaux projets tiennent compte des priorités à long terme du gouvernement, notamment de la protection de l'environnement.

Il ne s'agit plus uniquement de savoir utiliser au mieux le matériel disponible. La question du transport urbain, par exemple, se résumait autrefois à adapter le réseau de transport aux besoins de la ville; dans une grande mesure, cette règle reste vraie aujourd'hui. Mais étant donné le rôle primordial du transport dans l'économie des villes, les urbanistes doivent maintenant aménager les agglomérations selon un réseau de transport de haute qualité.

Les travaux du groupe de travail sur la révision de la politique des transports, mené par M. Davey et auquel ont participé toutes les composantes du ministère et plus particulièrement mon prédécesseur John Baldwin, se traduiront par des résultats positifs et bénéfiques pour le pays et les Canadiens lorsqu'on leur donnera suite, une fois les consultations terminées et l'approbation du parlement acquise.

La tâche est double. Nous devons continuer à élaborer des méthodes et des systèmes plus efficaces afin d'utiliser nos atouts et nous devons également être disposés à exploiter de nouvelles techniques qui nous permettront de progresser méthodiquement.

Parallèlement, les ressources humaines doivent être utilisées aussi efficacement que possible. J'ai sans cesse cru que nous devons nous efforcer d'offrir aux employés du MDT des carrières passionnantes et bien planifiées. La politique de formation doit être bénéfique et rassurante au point de vue humain et elle doit être efficace à long terme. À cette fin, je suis assuré que l'Institut de formation du ministère des Transports apportera une nouvelle dimension à l'avenir de notre main-d'oeuvre. Nous en serons tous très fiers au même titre que nous nous enorgeuillissons de faire partie du MDT. Tout en nous efforçant d'améliorer le réseau de transport des Canadiens, nous pouvons créer nos propres valeurs pour demain.

Je vous remercie sincèrement pour l'immense besogne que vous avez accomplie en ma compagnie, et vous souhaite tout le succès possible pour le travail que vous serez appelé à exécuter dans le futur.



ENERGY and TRANSPORT

Photos by Gord Thoma

by

Peter King

Since the beginning of the Industrial Revolution 200 years ago, man has begun to use extensively the non-renewable resources. In the last 50 years man has used the non-renewable resources so fast that their depletion is taking place at rates much faster than their creation.

The depletion rate of some resources which have been in the ground for millions of years has taken place so fast that they will not be around for another 50.

Even if such an imbalance between man's gathering of nature's production can be accepted, the mere fact that man has found it necessary to gather these resources so fast is indicative of his dependence on their availability. If man is dependent on fast-vanishing resources, then what could happen to him when the resources are gone is hardly desirable.

Two Approaches

There are two approaches put forward in answer to the problem. There are those who would have us believe that non-renewable resources must be conserved until new forms of technology can be developed which require little use of scarce resources and there are those who feel that we will be able to find alternative resources to replace scarce ones so that conservation is not really an issue.

The probability of finding new and alternative resources must be weighed against what will happen in the meantime to consumption.

If we examine the nature of most of the non-renewable resources we see that they are all utilized in the processes of modern industry and technology. It is hardly surprising that the few industrialized nations are consuming the major part of the world's non-renewable resources, while those countries whose industrial development is less advanced consume little. But these latter nations are beginning to awaken to the benefits of a technological civilization and accordingly we can expect an increasing demand for resources by those nations which are currently not yet fully industrialized.

The outcome of the searches for new resources will not really solve the problem since a large increasing new demand for already dwindling existing supplies can be expected from developing nations even if the industralized nations reduce their own demands.

Non-renewable Resources

Transportation relies on one non-renewable resource, oil. Except for a few electrified railway systems and electric urban transit systems all North American transport propulsion relies on oil.

Oil has hit the headlines recently. The use of oil in the recent so called oil crisis caused a shock to the world's economies, it has rearranged traditional world trading patterns, influenced national developments and caused people to pause and think about the efficiency of its use. Even in Canada, which had grown used to the idea that there was an abundance of oil available domestically, the realization has hit home that supplies are dwindling, and there may not be enough for domestic consumption by 1985.

Mankind has leaped into the age of technology and high standards of living in 50 years by the extensive use of machinery and tools to help him perform his tasks. But although man is perhaps the most efficient machine ever devised to perform work, he relies more and more on inefficient, energy-intensive labour saving devices to do his tasks for him.

These marvels of technology have been developed on the basis of the availability of unlimited energy supplies, and in consequence some designs are very wasteful. The basic principle behind the automobile engine for example has an efficiency which has been calculated to be as low as 25%.

Transportation Requirements

The impact on the future standards of man's lifestyle of inefficient energy usage by machinery is perhaps greatest when we consider transportation. Transportation permeates all aspects of our society. We note that vast sprawl of cities loosely held together by the ribbons of motorways, with cars speeding between home and workplace. We note that the materials of production are carried from their location to the factories along ribbons of railway steel or waterways. But we also note some anomalies.

Our cars with their high powered engines and extensive use of energy can accelerate in jack rabbit starts to speeds in excess of 100 mph. (170 km per h.) Given the questionable ability of its driver, one could ask what such an energy consumptive mixture of man and machine contributes to the effectiveness or efficiency of transportation.

To save ourselves from the effects of this techno-personal marvel we build larger and heavier cars and try to avoid the effects of high speed impacts with other similar cars. Heavier cars, however, require more energy to move their bulk and we are caught up in a cycle whereby a significant proportion of the energy consumed in an automobile has almost nothing to do with the actual movement of the contents of the vehicle.

The Canadian supply system is dependent on three factors: actual reserves, the availability of transport to move the supply, and the distribution of the refined products. Most known Canadian oil reserves are located in the Western Prairies, although smaller reserves also exist in Southern Ontario. The rate of exploitation of these reserves has grown in the last 25 years to a high of 2.2 million barrels a day – about 400,000 tons. Total remaining known reserves are estimated to be in the order of 30 billion barrels or about 30 years supply at current rates of production.

Historically, Canada has maintained a slight excess of production over consumption and permitted some exports but in so doing the economics of transportation dictated the movement of supply. As a result, Canada has exported to the United States and imported from what are now referred to as the OPEC countries. Recognizing that the Canadian supply system may be drying up and further, that OPEC countries may at their will interrupt supplies, the future security of Canadian oil supplies is somewhat dependent on any future domestic finds.

Exploration in the MacKenzie Delta and in the Sverdrup Basin of the High Arctic suggest that some oil is available, but the problems of transporting it are immense, and, when the ecological, economic, technological and demographic criteria are included in the consideration, it may be that other energy sources than oil should be found.

In the "oil crisis" of 1974, the losers have not yet all been identified. It is clear that the events of the winter of 1974 have given rise to new phenomena, not all of which would have been considered desirable two years ago – oil prices have risen, the profits of the oil companies have swollen, the threat of oil curtailments remains, and Middle East countries appear to have created a new powerful economic block.

People have become aware that standards and technology of modern living could be severely threatened if energy supplies were to be drastically curtailed.

It has been calculated that if one were to sum up the total time which driving consumes, which includes the time taken to get licenses, time watching television advertisements to buy cars, time for service station calls, time for insurance and accidents, and one divides that total time by the total distance travelled, the average speed which the north american driver achieves is 2 1/2 mph, (3.3 km per h.) a speed slower than the

average man walking.

If that calculation is indeed correct, one can only marvel at a social system which permits the use of so much non-renewable energy to achieve poorer results than those achieved by the use of the renewable energy of man.

Housing Trends

At the other end of the scale we find that mankind has moved his work and living spaces into large hivelike structures in order to be able to utilize to the last economic benefit the land space available to him. While such urban development cuts back on transportation requirements, there are other social costs not necessarily beneficial. How ironic that in a country where the population per unit land area is among the lowest in the world, society has built a replica of nature's most efficient space occupancy device, the heated dwelling or the beehive-like structures of office and apartment towers. So efficient is the heating effect of these bulidings that they must be cooled by energy-consuming air conditioning devices even on the coldest winter day!

Although there is some difference of opinion over the actual consumption pattern of all forms of energy in Canada there is agreement that the approximate energy consumption pattern looks as shown in these tables.

Table I

Residential and commercial	20.6
Industrial	22.9
Transport	19.5
Electric utilities	27.8
Other	9.2
	100%

TABLE II

Demand of energy in transportation sector

Urban car	7.0
Intercity	3.0
City truck	1.8
Intercity truck	2.2
Rail	1.05
Marine	.6
Air	1.7
Public transportation	.15

If we now assume that there is to be a curtailment in energy supplies it becomes very obvious that transportation and heating are among areas of high potential savings.

It has been claimed that Canadians live in buildings which are far too warm and furthermore that a lot of needless heating of unoccupied



buildings takes place. Be that as it may, considerable energy savings are possible if thermostats are turned down, because heat losses are lower when the temperature gradient between the inside and outside of buildings is less.

In transportation there are obviously two areas of possible savings: the first would be to use less transportation, the second is to use a more efficient form of transportation.

The Mobile Public

Over 50% of Canadian Transportation Energy (some 20% of total Canadian oil demand) is used by motor vehicles. This overwhelming preponderance shows that any conservation effort not including the car would produce only a limited result. But there are other difficulties, such as public attitudes; even a significant technological improvement in energy efficiency of the car is dependent on public acceptance to be successful.

Public acceptance of measures for the conservation of energy is based on many factors. To be really effective, the public must feel that there is a logical reason why they should reduce their consumption of energy, and for most families this means reduce their dependence on the car.

The car is, after all, a vital part of everyday life. It gets parents to work and gets the kids to school. It allows social visits, trips to the cottage and the purchasing of the weekly supplies of groceries. Indeed our cities are planned with the car in mind.

Urban development has taken place with the knowledge that Canadians can travel sizeable distances to maintain their standards of living and we see Canadian cities occupying much larger areas than European or Asian cities with populations many times greater.

If the use of the car is to be curtailed in order to save energy, Canadians would like to know why and, if there is no emergency requirement, then it is unlikely that curtailment will take place. When, in addition, the curtailment potentially involves considerable personal inconvenience, then public acceptance to do so without reason is likely to be very low. Indeed, there are extensive studies which serve to reinforce the principle that conservation of energy through curtailment of transportation is eminently unreasonable.

A study in the U.S. presented to the Senate Committee in October, 1973 suggested that if the U.S. were subject to a 5% cutback in energy, unemployment would rise to a level of 8%. If however, that 5% cutback were applied equally to the transportation as to other industries then the unemployment level would rise to 12%.

Intuitive thinking will show that such a study is reasonable.

Consider for the moment what is likely to happen if a reduction takes place in energy consumption. Industry, with less energy, slows production and now requires fewer raw materials to carry on working. Accordingly the delivery of raw materials would be reduced, but unless a significant reduction in delivery of raw materials takes place, the same tractive power is required to pull freight. Thus a small reduction in movement of goods still requires the same tractive power of the transportation system, and thus the same fuel demands. If, on the other hand, fuel to transportation is cut, then tractive power, and hence capability to deliver goods falls by the total amount of the capacity of the tractive power. A train which only has fuel to go 95% of the way might just as well not start.

Public Response

Let us also, for a moment, consider a reduction in the use of the motor car. The alternative to the motor car is obviously the public transit system, but most public transit systems either are already working at capacity or do not adequately serve those areas of urban sprawl which currently rely on the use of the motor car. Thus a sufficient shift to public transit to cause a significant energy savings impact is unlikely. Public transit tends to be adequate in those urban areas where healthy people with a little bit of willpower can generally walk, and on occasion get there faster!

It seems unlikely, therefore, that significant savings of energy in the transportation sector can be achieved practically by the reduction of the use of transport and, accordingly, energy savings will need to be achieved through the more effective use of transportation.

Energy savings are possible if certain measures are undertaken, such as using smaller, lighter cars travelling at lower speeds to replace

what is currently on the roads; by using car pools to replace the luxury of individual travel, and by increasingly using buses and other forms of public transit where possible.

Obviously public transit is not at this time an option, in many cases, but with time and increasing conscientiousness on the part of municipal authorities, public transit can become more widespread and more effective. Indeed, if the access to the downtown road system is made increasingly inconvenient for the private motor car owner, the sheer frustration of driving to find an inconvenient parking spot may do more to reduce the reliance on the motor car than any energy conservation measure.

Where reliance on motor cars is still an absolute necessity, the use of smaller, lighter vehicles designed for reduction of aerodynamic drag can do much to reduce energy consumption but it takes time until the giants of the motor industry can make available sufficient numbers of energy efficient cars to have an impact on the total pattern of consumption.

Government Response

In recent weeks full page ads have appeared in national newspapers sponsored by the Department of Energy, Mines and Resources. The government is instituting a program of energy conservation designed to awaken the conscience of Canadians to the problem. At the same time as the government is asking Canadians to reduce energy demands it is instituting internally a program designed to reduce government use of energy and reduce energy bills.

The heating in government buildings will be reduced to maintain temperatures at 68° fahrenheit rather than the customary 72°. Government vehicles will be driven at slower speeds. Smaller lighter cars will be purchased. Energy accounting will be introduced whereby projects may be analyzed on the basis of energy consumption rather than pure economic considerations alone.

There is currently no shortage of energy for the immediate future but for the longer term there is a distinct possibility that energy supplies will dwindle. Much of the conservation measures lie within the jurisdiction of provincial and municipal governments; all of them lie within the jurisdiction of the individual.

There is also concern that the waste of energy will speed the arrival of the day when severe mandatory restrictions may be necessary in order to preserve our way of life, but it is hoped that by careful personal attitudes such a day will be delayed long enough to provide alternatives and ensure that restrictions are never invoked.

Is there hope that with time we can resolve this issue, or are we faced with an inevitable abandonment through lack of energy resources of the technology which has served so well to promote mankind's standards of living? The answer is that there is hope, but to resolve the issue practically means a change in our value systems.

No longer can we evaluate projects simply in terms of economics and commercial profits, because to do so would show that it is highly uneconomic to undertake the research and development necessary to utilize efficiently energy sources such as the sun, the winds or the tides. But if these sources can be utilized, they provide a potential source of power virtually unlimited in human terms. Further, these are natural resources already in harmony with ecology and the environment which surely provides an added incentive to examine how to harness them adequately.

Now, if somehow, someone could find a renewable resource in harmony with ecology and the environment, which would provide safe transportation at speeds higher than 2 1/2 mph, (3.3 km per h.) our problems would be solved. Horses anyone?





ÉNERGIE et TRANSPORTS

par

Peter King

Depuis le début de la révolution industrielle il y a de cela 200 ans, l'homme a commencé à faire un usage considérable des ressources non-renouvelables. Au cours des cinquante dernières années, il s'est livré à un tel gaspillage que certaines des ressources que la terre recèle depuis des millions d'années seront épuisées dans cinquante ans.

Même si l'on peut admettre une telle attitude, le seul fait que l'homme ait jugé nécessaire d'utiliser ces ressources si vite prouve qu'il en dépend. Si ces ressources lui sont à ce point indispensables, que se passera-t-il alors lorsqu'elles seront épuisées?

Deux types de solution

Il existe deux solutions à ce problème: conserver ces ressources jusqu'à ce que l'on trouve des techniques moins gourmandes d'énergie ou trouver des sources d'énergie pour remplacer ces ressources non-renouvelables de sorte que la conservation ne soit plus véritablement un problème. Cette dernière solution pose le problème de l'augmentation de la consommation dont il faudra tenir compte avant d'avoir trouvé cette nouvelle source hypothétique d'énergie.

Si nous étudions la nature de la plupart des ressources non-renouvelables nous constatons qu'elles sont toutes utilisées par l'industrie moderne. Il n'est donc pas surprenant que les quelques nations industrialisées en consomment davantage que les pays dont le développement industriel est moins avancé. Or, ces derniers commencent à se rendre compte des avantages de la société technologique et il faut par conséquent nous attendre à ce que leur demande d'énergie augmente.

La découverte de nouveaux gisements ne résoudra pas véritablement le problème car, même si les pays industrialisés réduisaient leur consommation, cela ne compenserait pas la forte augmentation que l'on prévoit dans les pays en voie de développement.

Ressources non-renouvelables

Le transport dépend d'une ressource non-renouvelable, le pétrole. Hormis quelques réseaux de transport en commun électrifiés (chemins de fer et autobus), le pétrole est indispensable aux transports nord-américains.

On a beaucoup parlé de cette source d'énergie dernièrement, de cette crise du pétrole qui a bouleversé l'économie du globe, modifié les schémas commerciaux traditionnels, influé sur la croissance des nations et fait réfléchir les gens sur son efficacité. Même au Canada, où chacun pensait qu'il y avait abondamment de pétrole dans le pays, il a fallu se faire à l'idée que le pétrole s'épuise et qu'en 1985 le Canada n'en n'aura peut-être pas suffisamment pour subvenir à ses propres besoins.

L'approvisionnement du Canada dépend de trois facteurs: les réserves réelles, le transport de ce pétrole et un réseau de distribution des produits raffinés. La plupart des gisements de pétrole canadiens connus se trouvent dans les prairies de l'ouest et on trouve également quelques petits gisements dans le sud de l'Ontario. Au cours des 25 dernières années, le taux d'extraction a aug-

menté; il atteint un maximum de 2.2 millions de barils par jour, soit près de 400,000 tonnes. On évalue le reste des réserves connues à quelque 30 milliards de barils au total, c'est-à-dire 30 ans d'approvisionnement compte tenu de la consommation actuelle.

Depuis toujours, la production du Canada est légèrement excédentaire, ce qui lui permet d'exporter une partie de son pétrole vers des régions proches, étant donné le prix du transport. Le Canada vend donc son pétrole aux États-Unis et en importe des pays de l'OPEP. Étant donné que les ressources canadiennes s'épuisent et que les pays de l'OPEP pourraient "fermer le robinet", l'autonomie pétrolière du Canada dépend en quelque sorte de la découverte de nouveaux gisements dans notre pays.

Il semblerait, d'après les prospections effectuées dans le delta du Mackenzie et le bassin de Sverdrup dans le grand nord, qu'il y ait du pétrole dans ces régions. Mais son transport poserait des problèmes considérables, et, si l'on tient compte des facteurs écologiques, économiques, technologiques et démographiques, il semblerait préférable de se tourner vers d'autres sources d'énergie que le pétrole.

On ne connait pas encore tous ceux qui ont eu à pâtir de la crise de 1974. Mais il est évident que les événements de l'hiver de 1974 ont créé une nouvelle situation dont certains éléments n'auraient pas été jugés opportuns il y a deux ans: augmentation du pétrole, gonflement des profits des compagnies pétrolières, menace de rationnement de pétrole et constitution d'un nouveau pool économique puissant formé par les pays du Moyen-Orient. Le mode de vie moderne pourrait être gravement menacé par un rationnement sévère des sources d'énergie.

L'homme vit actuellement dans l'ère technologique, son niveau de vie est élevé et il lui a fallu cinquante ans pour parvenir à ce résultat grâce à la machine. Mais, même si l'homme est la machine la plus efficace qui ait jamais été conçue pour effectuer un travail, il dépend chaque jour davantage de dispositifs inefficaces, dévoreurs d'énergie pour l'aider à exécuter les tâches qui lui sont confiées.

Ces merveilles technologiques ont été conçues à une époque où l'on pensait que les sources d'énergie étaient inépuisables et par conséquent certaines constituent un modèle de gaspillage. On considère, par exemple, que le principe de fonctionnement du moteur de l'automobile a un rendement de 25% seulement.

Exigeances des transports

Les conséquences de l'utilisation inefficace d'énergie de ces machines sur le niveau de vie de l'homme risquent d'être plus graves au niveau des transports. Ces derniers sont présents dans tous les aspects de la société: les villes sont reliées par des autoroutes que les gens empruntent pour aller au travail, les matières premières sont transportées de leur lieu d'extraction vers les usines le long des voies ferrées ou des voies navigables... Mais on constate aussi certaines anomalies.

Nos voitures, avec leur moteur puissant et leur consommation élevée de carburant, peuvent démarrer "sur les chapeaux de roues" pour atteindre des vitesses de plus de 100 milles/h (170 km/h). Étant donné les qualités douteuses de leur conducteur, on pourrait se demander si ce mélange homme-machine, vorace d'énergie, constitue un moyen de transport efficace.

Qu'importe, nous construisons des voitures plus grosses et plus lourdes afin d'amortir les chocs en cas de collision. Or, il faut davantage d'énergie pour mettre en mouvement des voitures plus lourdes et nous constatons qu'une part importante de l'énergie consommée n'a pratiquement rien à voir avec son déplacement.

On a calculé que si l'on faisait la somme du temps consacré à la conduite (cela comprend le temps consacré à obtenir le permis de conduire, le temps passé devant la publicité télévisée avant l'achat d'une voiture, le temps passé dans les stations-service, le temps consacré aux assurances et aux accidents) et si on le divisait par la distance totale parcourue, la vitesse moyenne du conducteur nord-américain atteindrait 2 milles 1/2 h, (3.3 km./h) soit une allure inférieure à celle du piéton moyen.

Si ce calcul s'avérait exact, on ne pourrait que s'étonner devant une société qui permet l'utilisation d'une telle quantité d'énergie non-renouvelable pour parvenir à des résultats moins bons que ceux atteints grâce à l'énergie renouvelable de l'homme.

Dans le contexte du développement urbain

On constate par contre que celui-ci travaille et vit désormais dans des bâtiments où il y a une forte concentration humaine afin d'utiliser de la façon la plus rentable les terrains dont il dispose. Il y a donc d'un côté une économie au niveau des transports du fait de cette concentration urbaine et de l'autre des dépenses qui ne sont pas nécessairement profitables à la société. Par exemple, dans un pays comme le nôtre où la densité de population est parmi les plus basses du globe, nous avons imité la nature en bâtissant ces "tours-ruches" chauffées, servant soit de bureaux soit de domicile. L'effet de "serre" dans ces constructions est si important qu'elles doivent être climatisées même par les jours les plus froids de l'hiver! Ce qui représente encore une dépense d'énergie!

Bien que les opinions divergent quant à la consommation réelle de toutes les formes d'énergie au Canada, on s'accorde à dire que la répartition de la consommation d'énergie s'établit comme suit:

Tableau I

Résidentiel et commercial	20.6
Industriel	22.9
Transports	19.5
Services publics alimentés en électricité	27.8
Autres	9.2
	100%

Tableau II

Demande d'énergie dans le secteur des transports:

Automobiles (transport urbain)	7
Automobiles (transport interurbain)	3
Camions (transport urbain)	1.8
Camions (transport interurbain)	2.2
Chemins de fer	1.05
Navires	0.6
Avions	1.7
Transports en commun	0.15

Il est clair que c'est au niveau des transports et du chauffage que l'on pourra le plus facilement faire des économies si ces dernières deviennent indispensables.

On prétend que les Canadiens vivent dans des immeubles qui sont surchauffés et que beaucoup trop de bâtiments inoccupés sont chauffés. Quoiqu'il en soit, on peut économiser énormément d'énergie en baissant les thermostats, car la déperdition de chaleur est moindre lorsque la différence de température entre l'intérieur et l'extérieur est faible.

En ce qui concerne les transports, des économies peuvent être réalisés manifestement de deux façons différentes: utiliser moins souvent les transports, avoir recours à des modes de transport plus efficaces.

Transport public necessaire

Les véhicules automobiles consomment plus de 50% du carburant destiné aux transports canadiens (la demande de ce secteur atteint 20%



de la demande totale du Canada). Ce chiffre écrasant montre que tout effort d'économie qui n'inclurait pas l'automobile ne produirait qu'un effet limité. Mais on se heurte à d'autres difficultés comme l'attitude du public par exemple. En effet, l'échec ou le succès d'un moyen technique, permettant d'améliorer nettement le rendement

énergétique de l'automobile, dépend de l'accueil que le public lui réserve.

Ainsi, pour ce qui est des économies de carburant, l'attitude du public dépend de nombreux facteurs. Pour que toute mesure soit véritablement efficace, les automobilistes doivent savoir qu'il y a une raison logique pour réduire leur consommation de carburant, ce qui signifie que la plupart des familles devraient laisser plus souvent la voiture au garage.

Cette dernière joue tout de même un rôle capital dans la vie de tous et chacun: les parents s'en servent pour aller au travail et pour conduire les enfants à l'école, elle permet d'aller rendre visite aux amis, de se rendre au chalet et de faire des courses. Manifestement, nos villes sont conçues pour la voiture.

Les urbanistes ont construit des villes en reconnaissant le besoin qu'ont les Canadiens de voyager sur des distances appréciables afin de conserver leur niveau de vie, et nous constatons que les villes de notre pays sont beaucoup plus peuplées et occupent une superficie plus grande par rapport à leur population que les villes européennes ou asiatiques.

Si les Canadiens doivent utiliser moins souvent leur voiture afin d'économiser du carburant, ils voudront savoir pourquoi. Et s'il n'y a pas de crise évidente, alors il est peu vraisemblable qu'ils s'exécuteront. Si, en plus, ces restrictions risquent de gêner considérablement chaque individu, peu de gens les accepteront sans motif valable. Des études prouvent en effet qu'il est profondément absurde d'essayer d'économiser du pétrole en imposant des restrictions au secteur des transports.

Une étude réalisée en octobre 1973 pour le Comité du Sénat américain fait apparaître que si les États-Unis voyaient leurs disponibilités énergétiques diminuées de 5%, le chômage atteindrait 8%. Par contre, si cette diminution s'appliquait tant aux transports qu'aux autres industries, alors le chômage atteindrait 12%.

Un raisonnement logique permet de constater que les conclusions de cette étude sont fondées.

Imaginez pour l'instant ce qui se produirait si l'on imposait une réduction de la consommation d'énergie. Une industrie qui dispose de moins d'énergie est obligée de ralentir sa production et utilise moins de matières premières. Les livraisons de ces dernières seront moins importantes en volume mais les moyens de transports utiliseront la même quantité d'énergie pour les transporter, à moins d'une diminution importante. Donc la demande de carburant ne change pas lorsque le volume des marchandises à transporter subit une faible diminution. Si, par contre, on rationne le carburant au niveau des transports, c'est toute la capacité du réseau des transports qui diminue. Il est préférable, pour un train qui ne dispose de carburant que pour parcourir 95% du trajet, de rester à la gare.

Attitude du public

Envisageons également pour un instant une diminution de l'utilisation de l'automobile. La solution de rechange à la voiture est manifestement le transport en commun mais dans la plupart des cas ces derniers fonctionnent déjà à pleine capacité ou desservent mal les régions urbaines où l'on ne peut accéder actuellement qu'avec une automobile. Il est par conséquent peu vraisemblable que le public ait suffisamment recours aux transports en commun pour entraîner des économies importantes de carburant. Le transport en commun a tendance à répondre aux besoins précisément dans les zones urbaines où les gens qui en ont le courage peuvent marcher, ce qui leur permet même de se rendre parfois plus vite à destination.

Il semble donc impossible, dans la pratique, de réaliser d'importantes économies de carburant dans le secteur des transports en faisant moins souvent appel aux véhicules automobiles. On peut, par contre, parvenir à ces résultats en optimisant l'utilisation des transports.

On peut par exemple se servir de voitures plus petites, plus légères, roulant moins vite pour remplacer le parc actuel; on peut encore organiser une utilisation en commun de l'automobile en évitant les voyages solitaires qui sont un luxe et avoir davantage recours aux autobus et aux autres formes de transport en commun lorsque c'est possible.

De toute évidence, les transports en commun ne sont pas, dans de nombreux cas, une

solution de rechange, mais avec le temps et une prise de conscience plus aiguë des problèmes de la part des autorités municipales, ils se répandront davantage et deviendront plus efficaces. En effet, si les automobilistes peuvent de plus en plus difficilement accéder aux voies urbaines, le seul fait qu'ils soient obligés de se stationner dans un endroit peu commode risque fort de les dissuader davantage de prendre leur voiture qu'une quelconque mesure de conservation de l'énergie.

Même si l'on doit encore absolument s'en remettre à l'automobile, l'utilisation de véhicules plus légers et plus petits, conçus pour offrir moins de résistance à l'air, peut contribuer, pour une grande part, à économiser du carburant, mais il faudra un certain temps pour que les géants de l'industrie automobile puissent mettre en circulation un nombre suffisant de voitures de ce type pour que cela ait des effets sur la consommation globale du pays.

Attitude du gouvernement

Ces dernières semaines, le ministère de l'Énergie, mines et ressources a fait paraître des publicités dans les journaux nationaux. Le gouvernement a en effet mis sur pied un programme de conservation de l'énergie destiné à attirer l'attention des Canadiens sur ce problème. Parallèlement, on demande également au secteur de la Fonction publique d'essayer de faire des économies sur ce plan.

La température dans les bâtiments du gouvernement passera de 72° à 68° farenheit, les véhicules du gouvernement devront être conduits moins rapidement et ce dernier achètera des voitures plus petites et plus légères.

Pour les travaux où cela est possible, on tiendra compte du facteur consommation d'énergie au lieu de se baser uniquement sur des considérations d'ordre économique.

Il n'y a pas de pénurie de pétrole à prévoir dans l'immédiat, mais il est très possible qu'à long terme les puits seront à sec. La plupart des mesures de conservation sont du ressort des gouvernements provinciaux et municipaux. Elles dépendent toutes de chaque citoyen.

On se demande également, avec appréhension, si le gaspillage d'énergie ne nous rapproche pas plus vite du jour où il faudra avoir recours à un rationnement sévère pour ne pas compromettre notre mode de vie. Mais on espère que, grâce à l'attitude de tous et chacun, cette date fatidique sera repoussée suffisamment loin pour que l'homme trouve d'autres solutions et ne soit pas contraint d'avoir recours à ces mesures draconiennes.

Pouvons-nous espérer qu'avec le temps, nous pourrons résoudre ce problème ou bien serons-nous contraints, faute de sources d'énergie, d'abandonner les techniques qui ont servi si bien à élever le niveau de vie de l'humanité? Nous répondrons qu'il y a de l'espoir, mais pour résoudre ce problème il faudrait pratiquemment modifier notre échelle de valeurs.

Noús ne pouvons plus évaluer un projet en nous fondant simplement sur des considérations économiques et commerciales, car cela signifierait qu'il est extrêmement peu rentable d'entreprendre les recherches et le développement nécessaires pour utiliser efficacement des sources d'énergie comme le soleil, le vent ou les marées. Mais si on peut utiliser ces dernières, elles fourniront une énergie quasi illimitée. De plus, ce sont des éléments qui s'inscrivent naturellement dans le cycle écologique, ce qui constitue un point positif de plus pour que l'on étudie les moyens de les exploiter convenablement.

Donc, si quelqu'un trouve un jour une source d'énergie renouvelable qui s'inscrive harmonieusement dans le cycle écologique et qui permette de faire fonctionner un moyen de transport sûr à des vitesses de plus de 2 1/2 milles (3.3 km/h) à l'heure, alors notre problème est résolu. Avez-vous un cheval?



The Arctic Transportation Agency and Northern Air Policy

by

Mary Woodbury

Organized, interconnected transportation systems of great complexity link the provinces of Canada into a nation that stretches east-west from Atlantic to Pacific. Today, most Canadians in the south enjoy easy access to alternative and competing modes of transportation for themselves, their mail and their goods along the east-west axis of the country.

North of 60°, in Canada's northern territories, the situation is different. Water transport, other than that provided along the Mackenzie river system and the summer sealift to the northern coastal settlements, is limited. Rail transport serves only a few locations on the southern fringes of the territories. There are few roads of any kind. Northerners depend on air service for their transportation.

Canadians have not forgotten that it was the bush pilots who opened up the north — those intrepid airmen who flew prospectors and settlers into our northern latitudes.

The story today however is different. Modern jet aircraft are flying the northern skyway, and they require modern landing fields, telecommunications and weather reports, trained and ready ground crew. They present a different picture, not only to southerners with romantic notions of the past, but to northerners, as they strive to meet the desire and need for reliable, safe and regular transportation to and from settlements in the north.

Last winter Armed Forces personnel began driving huge MOT trucks across the northland toward Eskimo Point on the west coast of Hudson Bay, in preparation for updating and improving the airstrip. The projects to be carried on in the next five to 10 years will bring the Northern Territories up to a standard where regular, reliable transportation by modern aircraft from over 40 locations will be possible.

Armed Forces photo



It has been five years since the then Minister of Transport, Don Jamieson and the then Minister of Indian and Northern Affairs, Jean Chrétien, sponsored a Yellowknife town meeting. The criticism and complaints aired by the residents at that meeting led to a task force which prepared a report for MOT and the Canadian Transport Commission. A questionnaire was circulated by the Arctic Transportation Agency (ARTA) to more than 200 people at 68 locations in the territories in

English, two Eskimo dialects and four Indian languages. From this input a policy statement was formulated.

Basically, the Northern Air Facilities Policy, which has now been approved, suggests three different types of airport facility:

- Those serving a population centre that is already on regular scheduled air service; is a major distribution centre, a capital or regional administrative centre, and has an extensive continuing resource development role, e.g. Resolute.

- Those serving a population centre of more than 400 with no other regular means of transportation; is a growing community and plays an active role in resource development, e.g. Coppermine.

- Those serving a community of more than 100 that has no other means of transportation than air, e.g. Pond Inlet.

The key to this particular policy is the comprehensiveness of the plan. The role of MOT, the Territorial Government and the local community council is clearly outlined, as are the type of air carriers expected to use each airstrip, the length and surface characteristics of the strip; support facilities, such as fuel storage, garage, parking, passenger-cargo shelter, and servicing facilities such as air-ground, point-to-point communications, meteorological observations, and runway upkeep.

The operation and maintenance of Arctic airports is of primary importance.







The practice of employing southerners to go north and serve the many airfields is outdated. Community-operated airstrips are much more desirable. In keeping with its policy of utilizing local skills and having northern residents as involved as possible in the development of the north, MOT is planning on the actual operation of the airports passing to the local residents.

New ground will have to be broken in training and hiring policies. Already the Department of Environment which is responsible for weather forecasting has experimented with hiring and training community people to run a 24 hour weather service in Pond Inlet. There, seven young local people have been trained to run the weather station on a shift basis for the past three months. It is working, and working well.

Plans are also under way to open training facilities in a central location such as Fort Smith, on the southern border of the Northwest Territories. The crucial role of area manager in inspecting communication equipment, providing technical advice and operational expertise to the local community airport staff is obvious. In each of the smaller type of airport facility, two or three people would be hired by the community council to carry out the tasks of snow removal, weather watch, and communications as well as that of ticket agent, garage maintenance and ground support. This will provide a very real possibility for local employment in the national transportation system.

The primary task in the next five years will be the building of the facilities, the training of the staff and communication with the people of the north. The aim of the latter is to show the desirability and cruciality of their involving themselves in the creation and maintenance of their own airstrip — in effect their busiest main street.

To ease the task of informing the some 15,000 Canadians north of sixty of the policy and the plans formulated in response to their complaints and suggestions from the past, the Arctic Transportation Agency and the Ministry's Public Affairs Branch, with Doug Wilkinson, a film maker and television producer, based in the north as consultant, are preparing a multimedia program for communicating with northerners. By means of pamphlets, brochures, short film and slide productions, information on the new facilities policy will be spread across the north, inviting local participation and cooperation.

When the new air facilities policy is considered in the light of the federal government's national objectives for northern Canada, it begins to look more significant than it first appears. The upgrading of airstrips so that turbo-prop and jet carriers may land on a regular basis may well reduce the cost of northern transportation and allow northern residents to participate more fully in Canadian society. The opportunity for local control and local employment offers residents a concrete way of engaging in the task of bringing the Territories closer to the rest of Canada. It will also allow the young people, if they wish, to look beyond the confines of their home communities for economic, social and vocational opportunities.

Meanwhile, the cooperation of the different levels of government is very visible as MOT trucks, with their Armed Forces drivers, move across the snow to Eskimo Point. The Department of Indian Affairs and Northern Development, the Ministry of Transport and the Territorial Governments are sharing the financing. The Department of Environment is training weather watchers. The Arctic Transportation Agency and MOT's Public Affairs Branch are sponsoring the communications with northern residents. The local community councils will be involved directly in the selection of personnel. The years of consultation across departmental and territorial lines are leading to a whole new landscape, with 40 modern equipped landing fields giving regular, reliable air transportation.

Canada north of 60° is a vast domain. The links with the south have at times been tenuous. The last quarter of the 20th century will see those links forged on a solid basis.

L'Agence des Transports dans l'Arctique et la Politique d'Infrastructure dans le Nord

par Mary Woodbury

Des réseaux de transport organisés, interdépendants et extrêmement complexes, relient les provinces du Canada – de l'Atlantique à l'est au Pacifique à l'ouest. De nos jours, divers moyens de transport concurrentiels sont à la disposition de la majorité des Canadiens résidant au sud et ils sont susceptibles de les transporter, eux-mêmes ainsi que leur courrier et leurs biens dans l'axe est-ouest du pays.

Au nord du 60ème parallèle, dans les territoires du nord canadien, la situation est bien différente. Les transports organisés par voie d'eau sont peu développés – le système de la rivière Mackenzie et le ravitaillement d'été vers les centres de population de l'Arctique nord constituent des exceptions. Le transport ferroviaire ne dessert que quelques localités situées aux confins de la partie sud des territoires. Les routes de tous genres font le plus souvent défaut. En matière de transport, c'est le service aérien qui subvient aux besoins des résidents du nord.

Les Canadiens n'ignorent pas que ce sont les "pilotes de brousse" qui ont rendu le nord accessible. Ces individus intrépides ont conduit prospecteurs et colonisateurs dans les centres polaires. Cependant, les choses ont bien changé depuis le bon vieux temps. Les avions à réaction modernes exigent des pistes d'atterrissage, des télécommunications et des rapports météorologiques modernes ainsi que du personnel non-navigant qualifié et disponible. Ils ouvrent de nouvelles perspectives, non seulement aux "sudistes" pour qui le passé conserve un certain attrait romantique, mais également aux "nordistes" qui désirent ardemment voir satisfaire un besoin crucial: un moyen de transport fiable et sûr, desservant régulièrement les localités du nord.



L'hiver dernier des employés des Forces Armées au volant d'énormes camions du MDT ont entamé le périple vers Eskimo Point sur la côte ouest de la Baie d'Hudson. On se prépare à y améliorer la piste d'atterrissage. Grâce aux projets prévus pour les cinq à dix prochaines années, des avions modernes pourront assurer dans le nord un service régulier et desservir plus de quarante endroits différents.

Cinq années se sont écoulées depuis la réunion publique tenue à Yellowknife sous l'égide de Don Jamieson, qui était alors ministre des Transports, et de Jean Chrétien alors ministre des

Affaires indiennes et du Nord. Les critiques et les plaintes exprimées par les résidents au cours de cette réunion entraînèrent la création d'une équipe spéciale qui prépara un rapport à l'intention du MDT et de la Commission canadienne des Transports. L'Agence des transports dans l'Arctique diffusa un questionnaire rédigé en anglais, en deux dialectes esquimaux et en quatre langues indiennes parmi plus de 200 personnes réparties dans 68 endroits des territoires. Cet apport fut à la base d'un exposé de principe.

Fondamentalement, la politique d'infrastructure dans le Nord (Northern Air Facilities Policy) qui a maintenant été approuvée préconise trois genres différents d'installations aéroportuaires, soit:

- les installations d'un centre de population régulièrement desservi par un service aérien à horaire fixe, qui est un important centre de distribution, une capitale ou un centre administratif régional et joue en permanence un rôle important dans le domaine de l'exploitation des ressources, par exemple Resolute;

- les installations aéroportuaires d'une localité comptant plus de 400 résidents, dépourvue de tout autre moyen de transport régulier, dotée d'une population croissante et jouant un rôle actif dans l'exploitation des ressources, par exemple Coppermine;

- les installations pour une population supérieure à 100 et dépourvue de tout autre moyen de transport, par exemple Pond Inlet.

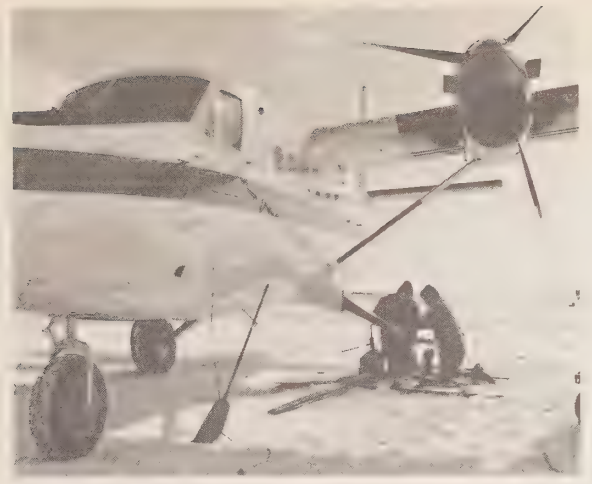
L'envergure du plan constitue le pivot de cette politique particulière. Les rôles du MDT, du gouvernement territorial et du conseil communautaire local sont clairement définis. Il en est de même pour le genre de transporteur prévu à chaque terrain, la longueur et le revêtement du terrain; les installations de soutien au sol comme les réservoirs de carburant, le garage, le stationnement, les locaux pour passagers et marchandises et les services connexes comme les communications air-sol, d'un point à l'autre, les observations météorologiques et l'entretien des pistes.

L'exploitation et l'entretien des aéroports de l'Arctique sont extrêmement importants.

Nous avons dépassé le stade de l'embauchage des "sudistes" en vue d'exploiter les nombreux terrains dans le nord. Ceux qui sont exploités par la collectivité sont de loin plus souhaitables. En accord avec sa politique d'utilisation des talents locaux et d'encouragement de la participation locale au dévelopement du nord, le MDT compte laisser aux résidents mêmes l'exploitation des aéroports. Les politiques de formation et d'embauchage devront s'écarter des pratiques traditionnelles. Le ministère de l'Environnement qui est chargé des prévisions météorologiques a déjà effectué l'expérience suivante: on a embauché et formé des résidents locaux afin d'assurer un service météorologique permanent à Pond Inlet. Pendant les trois derniers mois, on y a entraîné sept ou huit jeunes résidents locaux à assurer — en se relayant — le fonctionnement de la station météorologique. Les résultats sont des plus prometteurs.

Le plan actuel consiste à réécrire, d'une





façon plus simple, les manuels d'opération afin de permettre à des personnes n'ayant pas fréquenté une école technique d'utiliser des radios, des tracteurs, des instruments de communication et météorologiques. On prévoit également la création d'un centre de formation à un point central comme Fort Smith à la limite sud des T.-N.-O.. De toute évidence, le rôle du directeur de zone sera décisif lorsqu'il s'agira d'inspecter le matériel de communications et d'offrir une assistance technique et un savoir faire spécialisé en matière d'exploitation au personnel de l'aéroport communautaire. Pour chacun des deux types d'installations aéroportuaires de petites dimensions, le conseil communautaire embaucherait deux ou trois personnes qui s'occuperaient de l'enlèvement de la neige, de la garde météorologique et des communications et également de la vente des billets, de l'entretien du garage et du soutien au sol. On ouvre ainsi de substantielles perspectives d'emploi sur le plan local dans le réseau national de transport.

Au cours des cinq prochaines années, la tâche principale consistera à construire les installations, à former le personnel et à établir des contrats avec les résidents du nord. On veut ainsi leur démontrer à quel point il est souhaitable et important qu'ils participent à la création et à l'entretien de leur propre piste d'atterrissage; celle-ci représentera effectivement l'artère la plus fréquentée de leur localité.

Il faudra informer les quelque 15,000 Canadiens résidant au nord du 60ème parallèle de la politique et des plans élaborés à la suite des plaintes et des critiques qu'ils avaient exprimées dans le passé. Afin de faciliter ce travail, l'Agence des transports dans l'Arctique et la direction des Affaires publiques du ministère travaillent en consultation avec M. Douglas Wilkinson, un cinéaste et un producteur de télévision. Celui-ci a préparé une proposition multimedia qui fut récemment dévoilée à Yellowknife. C'est au moyen d'opuscules, de brochures et de courts programmes reposant sur des films et des diapositives que l'on fera connaître les détails de la politique d'infrastructure dans tout le nord. On s'en servira également pour solliciter la participation et la coopération sur le plan local.

Lorsque l'on étudie la nouvelle politique de l'infrastructure dans le cadre des objectifs nationaux du gouvernement fédéral concernant le nord, sa réelle importance commence à se faire jour. L'amélioration des pistes d'atterrissage qui permettra leur utilisation régulière par des avions à turbopropulseurs et à réaction pourrait éventuellement réduire le coût du transport dans le nord et permettre à ses résidents de jouer un rôle plus actif au sein de la société canadienne. La possibilité d'exercer un contrôle et d'offrir des emplois sur le plan local représente pour les résidents une façon tangible d'entamer le rapprochement des territoires avec le reste du Canada. On élargira également l'horizon des jeunes gens intéressés dans les domaines économique, social et dans celui de la formation; ils n'auront plus à se limiter à leur localité d'origine.

Quant à la coopération entre les différents paliers de gouvernement, les chauffeurs des Forces Armées qui, au volant des camions du MDT, se frayent un chemin dans la neige en direction d'Eskimo Point — en témoignent très clairement. Le financement est assuré conjointement par le ministère des Affaires indiennes et du Nord, le ministère des Transports et les gouvernements des Territoires. Le ministère de l'Environnement s'occupe de la formation des gardes météorologiques. L'Agence des transports dans l'Arctique et la direction des Affaire publiques du ministère se chargent des communications avec les citoyens du nord. Les conseils communautaires locaux seront directement associés à la sélection du personnel. Les consultations qui ont, pendant des années, rapproché les organismes des ministères et des Territoires sont en train de produire des perspectives toutes nouvelles: 40 terrains d'atterrissage modernes et bien aménagés permettant d'assurer un transport aérien sûr et régulier.

Au nord du 60ème parallèle, le Canada comprend d'immenses étendues. Leurs liens avec le sud ont parfois été fragiles. Peut-être le dernier quart du 20ème siècle en verra-t-il enfin le raffermissement.

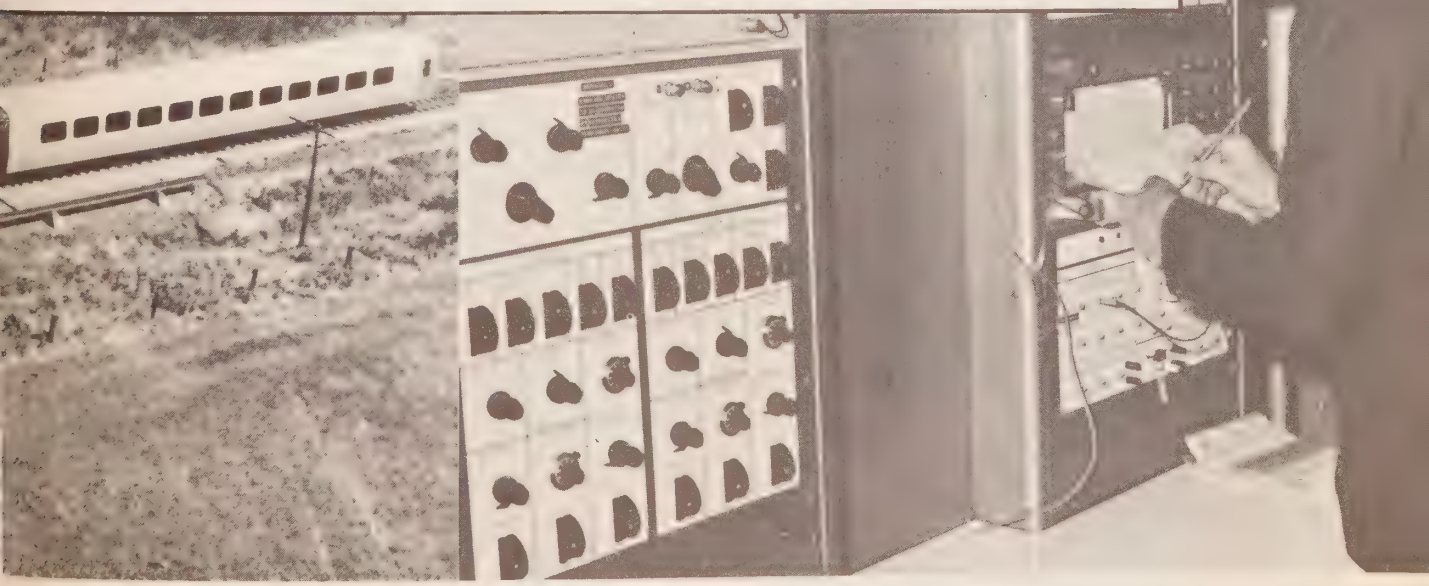

LRC TOMORROW'S
TRAIN TODAY



The LRC, Canada's new highspeed intercity passenger train is now being tested as part of Canadian National's regular passenger train service between Toronto and Sarnia. The train is the product of five years' development of a three-company consortium consisting of MLW Industries, Alcan Canada Products Limited and Dominion Foundries and Steel Limited. Financial support in the development was also provided by the Canadian government through the Transportation Development Agency of the Ministry of Transport, and the Department of Industry, Trade and Commerce.

LRC (the initials stand for lightweight, rapid and comfortable) is designed to move passengers between major population centres comfortably and quickly, with downtown-to-downtown convenience. It operates with a minimum of maintenance and service time on turnarounds. Because of its light weight and compact, streamlined contour, the train will accelerate rapidly and maintain speeds in the 120 mph range (200km per hr). Powered banking is built into the suspension system to take passengers comfortably through curves at speeds 35 to 40 percent faster than possible with conventional equipment. These advantages coupled with the use of economical diesel electric power make LRC a potential high-speed, low-cost comfortable means of transportation.

Riding the steel grey train between Toronto and London recently proved as satisfactory as the name promises. The trip was extremely quiet, comfortable, and fast. The exterior has clean lines and the interior of the coach was molded and modern. The banking is surprising but smooth. The exciting news about the LRC is that it is not so much a technological breakthrough as a well thought out improvement to basic well-proven railroad technology. Another Canadian achievement in the area of transportation is visible not on the horizon but right on one of our main transportation corridors.



BE SEEN



Two vehicles used in tests showing apparatus installed on hood.

A ROAD SAFETY UNIT INVESTIGATES THE USE OF CAR HEADLIGHTS IN DAYTIME

by

Craig Fraser-Lee
Regional Public Affairs Officer
Toronto

Increasingly, it seems, Canadian drivers are opting to drive with their headlights on during the daytime. Years ago if this was done, other drivers would flash their lights thinking they had forgotten to turn them off. Today this seldom happens. Alarmed by the high numbers of grinding head-on collisions, some drivers now feel that to be seen more clearly by "the other guy' is an excellent way of avoiding many kinds of collisions.

M. Craig Fraser-Lee agent aux affaires publiques du bureau de Toronto, nous entretient d'un programme de recherche actuellement mené par le ministère des Transports. L'étude tente de vérifier si l'usage des phares automobiles durant le jour peut contribuer à la sécurité routière.

Various surveys have shown that a vehicle becomes more visible to other drivers on the road during day-light hours when it is equipped with illuminated running lights. For instance, the American Journal of Optometry makes reference to a survey conducted on its Canadian routes by the Greyhound Bus Corporation. It demonstrated a 24% reduction in daytime accident frequency and "a substantial increase in miles operated per accident"* when headlights were used during the daytime.

To examine why this seems to be, and to study other potential car accident countermeasures, the Ministry of Transport's Road Safety Branch has established a new Unit headed by Dr. Dennis A. Attwood of Niagara Falls, Ontario. Dr. Attwood operates out of facilities at Downsview Airport, Toronto, in conjunction with the Defence and Civil Institute of Environmental Medicine (DCIEM). His research involves studies related to possible new Canadian Motor Vehicle Safety

* *Allen, M.J., and Clark, J.R., "Automobile Running Lights — A Research Report", "American Journal of Optometry", 1964, pp 294.*

Standards which affect the safety-related design of all new automobiles sold in Canada. These standards are set by the Ministry of Transport.

Dr. Attwood, 31, joined the Ministry of Transport in 1973. The author of many books, articles and reports in the "human engineering" field, he has set up a comprehensive study which he hopes will answer the big questions — IF? HOW? and WHY? — running lights can reduce daytime crashes.

The study is two-fold. Its first aspect is a series of tests, recently completed at Downsview, in which a vision-restricting apparatus has been mounted on the hood of a car. This vehicle is driven down the length of a runway at a constant speed of 50 mph. At the same instant a similar vehicle is approaching (as on a highway), also travelling at 50 mph. The cars are 7000 feet apart when they start simultaneously.

When the cars are 5000 feet apart and closing at a relative speed of 100 mph, an experimenter, sitting in the back seat, releases a shutter and two things happen: The vision-restricting apparatus drops away from the driver's line of vision, and a timing device begins. This timing device stops when the driver has spotted the approaching vehicle and pressed one of two buttons mounted on the steering wheel to signal whether the car was approaching to his left or to his right. In the series of tests that took place over a two week period, half of the approaching vehicles had their low beam headlights turned on. Six subjects and two identical cars were used. A third car was modified for use as a camera car.

Results from these experiments indicate that the test vehicle with its headlights on was significantly more visible than with its headlights off over a wide range of daylight conditions, including bright sunshine. In addition, the data indicates that at low levels of daytime illumination typical of those around sunset, sunrise and on cloudy days, vehicles without headlights, travelling towards each other under certain conditions of terrain and lighting might not be seen by oncoming drivers until they were within 1500 or 2000 feet of each other. This situation could be extremely dangerous on two-lane highways when one of the vehicles, attempting to pass, pulls into the lane of the other.

Dr. Attwood is currently conducting laboratory tests in a simulator of his own design and compiling the total results of this first aspect of the programme. The simulator uses films taken during the runway tests.

The second aspect of Dr. Attwood's programme is a survey conducted with the full cooperation of the Department of National Defence. In it, about 350 DND vehicles across the country have been paired for similar operating conditions, be it rural, urban, or various mixes of the two. One car in each pair has been modified so that the low-beam headlights will operate whenever the car is started; the other in the pair does not use headlights during daylight hours. After a two-year period, Dr. Attwood will examine the official accident reports of any daytime collisions and compile significant correlations in an effort to help determine the safety value of driving with one's headlights on during the daytime. His final evaluation will be based on both the runway tests and the survey.

Should the test and survey results be scientifically significant, Dr. Attwood's research could result in a new Canadian Motor Vehicle Safety Standard requiring wiring modifications to new cars in order that their headlights be illuminated whenever the car is in operation; or a driver education programme to encourage drivers to switch on their headlights even on a bright sunny day; or perhaps the final conclusions will indicate no significant advantage. In the interests of highway safety, however, the research goes on.



Camera car support vehicle. Film is used in the simulator.



Dr. Attwood, the experimenter, sits in back seat controlling vision restrictor and timing device.



Driver presses appropriate button after spotting approaching car and determining which lane it is in.

Transcan mini-reportages

EXTRAORDINARY MODEL OF THE PORT OF MONTREAL

by

Normand Héroux

Three years ago Noël Laverdière, Montreal, undertook a very unusual piece of work, a scale model of the port of Montreal.

This model covers a distance of more than 13 miles (18 km.), from the Champlain Bridge east to section 37 of the port and 2.5 miles (3.3 km.) from Place Desjardins south to Taschereau Boulevard in Longueuil. Nothing within these limits has been forgotten; even Expo 67 is reproduced to the smallest detail. The model is 63 feet (19 metres) by 10 feet (3 metres) and will require 24,000 pounds (10,800 kg.) of cement. Some 450 gallons (2,025 litres) of water will be used to produce the St. Lawrence River. When completed it will weigh 33,000 pounds (14,850 kg.). Like Rome, it will not be built in a day: more than 6 years of work is required.

All physical changes made in that sector of the port of Montreal in the future will be reproduced in the model. It will be possible to conduct studies on the port facilities more easily and to discuss options, saving time and money by elimi-



nating the need to carry out inspections by land, water and air.

The model is being built at Cité du Havre. Mr. Laverdière took on the full-time task, renouncing for the time being his position of Superintendent, Buildings and Plumbing Division.

This artist is no beginner. A few years ago he built a model of the building which houses the Montreal Port Administration. At the age of 15, he built a scale model of the Quebec Bridge.

UNE REMARQUABLE MAQUETTE DU PORT DE MONTREAL

par

Normand Héroux



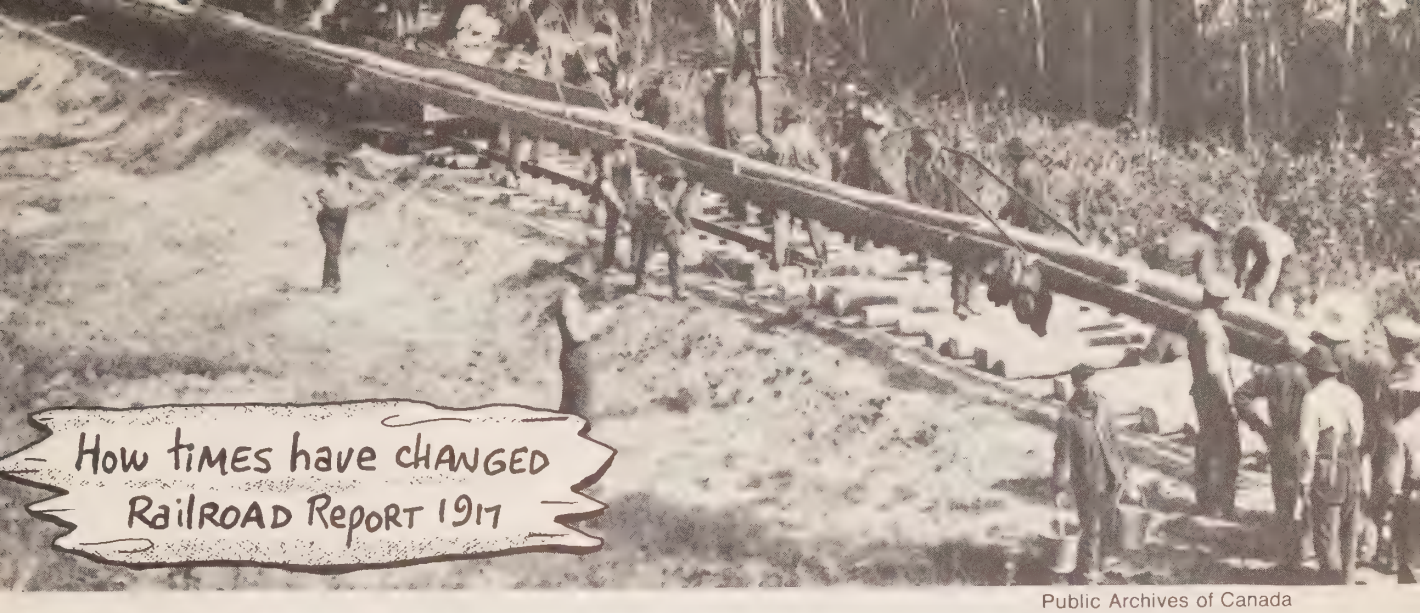


M. Noël Laverdière de Montréal a entrepris il y a trois ans une oeuvre peu commune. Il a accepté de reproduire à l'échelle une maquette du port de Montréal. Cette maquette couvre, d'ouest en est, une distance de plus de 13 milles (18 km.), soit du pont Champlain jusqu'à la section 37 du port et, du nord au sud, une distance de 2 1/2 milles (3.3 km). soit de la Place Desjardins jusqu'au boulevard Taschereau à Longueuil. Rien à l'intérieur de ces limites n'est oublié et même Expo 67 est reproduite jusque dans ses moindres détails. La maquette mesure 63 pieds (19 mètres) par 10 pieds (3 mètres). Elle nécessitera 24,000 livres (10,800 kg.) de ciment, 450 gallons (2,025 litres) d'eau, afin de reproduire le Saint-Laurent, et elle aura un poids total de 33,-000 livres (14,850 kg.). La maquette tout comme Paris ne sera pas bâti en un jour, et elle nécessitera un peu plus de 6 ans de travail.

La maquette reproduira dans le futur tous les changements qui seront faits dans le secteur du port de Montréal. Elle permettra de conduire plus aisément des études sur les installations portuaires, et de discuter des options. Elle sera une économie de temps et d'argent en évitant des déplacements terrestres, maritimes et aériens.

La maquette se trouve à Cité du Havre. M. Laverdière a été affecté à plein temps à la tâche de la construction de la maquette, renonçant pour l'instant à son poste de surintendant à la division des bâtisses et de la plomberie.

Cet artiste n'en est pas à ses premières armes, puisqu'il a déjà construit il y a quelques années une maquette de l'édifice qui abrite l'Administration du port de Montréal. À 15 ans, il avait construit un modèle réduit du port de Québec.



Public Archives of Canada

Despite great improvements in track-laying machinery since the Canadian Pacific Railway was strung across the continent in the late 1800's, building the Canadian Northern and the Grand Trunk Pacific at the turn of the century was still largely a matter of muscle and sweat.

Backbone of the muscle power were the "station men", the subcontractors who worked piece rates, digging out the rough sections of the right of way at so many cents per cubic yard. They negotiated their contracts with the contractors and worked their own hours and, according to one contractor, would take out more rock in a month than twenty men working for wages.

A legend on the Grand Trunk Pacific was "Swansie, the Tireless Swede". He would get together a bunch of fellows all as crazy as himself, all equal partners. They'd fix themselves up with a subcontract, and go to it.

You'd see them working sometimes in the dark, with sputtering banqo lamps giving the impression the forest was afire. You'd always see them working in the morning when the rest of the camp was just beginning to rise. Their working day was from two or three in the morning to ten or eleven at night.

The only requisition Swansie and his crew made on the contractor for food supplies was for meat. Just meat.

"Got to work" says Swansie. "No time to fix grub. No time to suck water with carrot flavor or tomato flavor; that's all vegetable is".

"Give us meat. Every ounce good, solid stuff. Dried meat, salt meat, smoked meat, canned meat, I don't care. If raw meat, can gulp it like dog. Time needed to fix dinner, three minutes. Time needed to eat dinner, nothing".

"Eat while driving stone boat. Got to work", says Swansie.

And work they did. At the end of their subcontract the right of way was cut through the hill and the contractor settled up with the crew. Twenty four hundred dollars apiece is what Swansie and his crew cleared. Cash.

Two of Swansie's crew bought homesteads in Saskatchewan and became set up for life. Not so the rest. In a few weeks Swansie was back. Broke, but, as always, cheerful and optimistic.

"Got to work", Swansie says.



Reference: *Royal Commission on Railways and Transportation, 1917. Canadian National Railways, Vol. 2, by G.R. Stevens, 1962.*



Depuis que le ruban d'acier du Canadien Pacifique a ceinturé le continent au crépuscule du 19è siècle et malgré les perfectionnements notables réalisés dans la machinerie de pose des voies, la construction à l'aube de notre époque, du Canadian Northern et du Grand Trunk Pacific, fut encore en majeure partie une question de muscles et de sueur.

L'énergie musculaire était fournie surtout par les manoeuvres des tâcherons qui travaillaient à prix forfaitaire et qui déblayaient les sections difficiles des voies de passage à tant de cents la verge-cube. Ils négociaient avec les entrepreneurs leurs propres contrats, travaillaient selon leur propre horaire et, si l'on en croit l'un des entrepreneurs, enlevaient en un mois plus de roches que vingt salariés réunis.

L'une des figures légendaires du Grand Trunk Pacific a été "Swansie, l'increvable Suédois". Il réunissait une bande de compagnons, tous aussi détraqués que lui, tous partenaires égaux. D'un commun accord ils se liaient par un sous-contrat, puis se ruaient au travail.

Vous auriez dû les voir besogner, parfois dans l'obscurité, à la lueur grésillante des lampes à carbure qui donnaient l'impression que la forêt était en feu. Imaginez les au travail à l'aube, alors que le reste du campement commençait à peine à se lever. Leur journée de travail débutait à deux ou trois heures du matin et finissait à dix ou onze heures du soir.

Pour ce qui est des vivres, la seule fourniture que Swansie et son équipe exigeaient de l'entreprise, était la viande. Seulement de la viande.

"Faut trimer" disait Swansie. "pas le temps de fricoter la bouffe. Pas le temps de téter de l'eau à saveur de carotte ou de tomate; le légume n'est pas autre chose. Donnez-nous de la viande. Chaque once solide tient au corps. Viande séchée, viande salée, fumée ou en conserves, je m'en moque. Si la viande est crue, je l'avale comme un chien." "Temps pour préparer déjeuner, trois minutes. Temps pour manger déjeuner, rien". "mangez en poussant la benne à caillasse. Faut trimer..." disait Swansie.

Et ils trimèrent en effet. À la fin de leur sous-contrat, la voie de passage était découpée dans la colline et l'entrepreneur fit ses comptes avec l'équipe. Deux mille quatre cent dollars chacun, c'est ce que Swansie et ses copains touchèrent. En espèces.

Deux des membres de l'équipe de Swansie achetèrent des fermes en Saskatchewan et s'y fixèrent pour le reste de leurs jours. Mais pas les autres. Quelques semaines plus tard, Swansie était de retour. "Faut trimer," disait Swansie...

Référence: *Commission royale d'enquête sur les chemins de fer et les transports, 1917. Canadian National Railways, Vol. 2, de G.R. Stevens, 1962.*



MINI-RESCUE 1974

4:32 p.m. "Mayday. Mayday. This is CF WMM. I have an engine failure. I think I am out of fuel and am going to land on a little lake three miles north of Goldsand." "This is MO 104. I am in the area of Goldsand Lake and will hang around at the north end until WMM lands".

4:34 p.m. "Hallo MO 104. This is CF WMM. I have landed and will chop a hole in the ice to see how thick it is. I'll need someone to land with about 10 gallons of fuel. Please stand by."

4:39 p.m. "Hallo MO 104. This is CF WMM. The ice is about six and a half inches thick. Please inform La Ronge Aviation to bring fuel. I am on the south shore of a small round lake about three miles north of the outlet to Goldsand Lake."

4:46 p.m. "This is MO 104. I have passed your message and am still circling at the north end of Goldsand but cannot see you. I am returning to Lynn Lake."

5:22 p.m. "This is CF QIO (La Ronge Aviation) I am over Goldsand but unable to locate CF WMM."

5:26 p.m. "This is CF WMM. I have my position plotted. I am on the small lake just under the "E" of Goldsand Lake and have a good fire burning."

5:27 p.m. "This is CF QIO. I see your fire and am coming in".

5:49 p.m. "This is CF QIO. Am now airborne and will land at Lynn Lake in five minutes".

5:49 p.m. "This is CF WMM. Am now airborne and will be following CF QIO."

5:58 p.m. "Both planes safely down at Lynn Lake and clear. Lynn Lake Aeradio Log, November 6, 1974.

MINI-SAUVETAGE 1974

16h32 "Mayday. Mayday. Ici CF WMM. J'ai une panne de moteur. Je pense être à court d'essence et je vais me poser sur un petit lac à 3 milles au nord de Goldsand". "Ici MO 104. Je suis dans la région du lac Goldsand et je vais en patrouiller la partie nord jusqu'à ce que WMM se pose."

16h34 "Allo MO 104. Ici CF WMM. Je me suis posé et je vais découper un trou dans la

glace pour en constater l'épaisseur. J'aimerais bien que quelqu'un atterrisse avec une dizaine de gallons de carburant. Prière rester dans les parages."

16h39 "Allo MO 104. Ici CF WMM. L'épaisseur de la glace est d'environ six pouces et demi. Prière demander à La Ronge Aviation d'apporter du carburant. Je me trouve sur la rive sud d'un petit lac, environ 3 milles au nord du déversoir dans le lac Goldsand.

16h46 "Ici MO 104. J'ai transmis votre message et je patrouille toujours la partie nord de Goldsand mais je n'arrive pas à vous repérer. Je retourne au lac Lynn.

17h22 "Ici CF QIO (la Ronge Aviation). Je survole le Goldsand mais suis incapable de repérer CF WMM.

17h26 "Ici CF WMM. Ma position est toute indiquée. Je me trouve sur le petit lac juste sous le "E" de Goldsand Lake et j'ai allumé un grand feu."

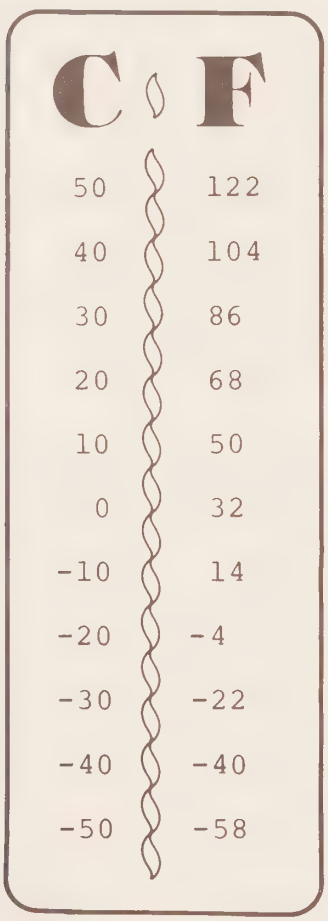
17h27 "Ici CF QIO. J'aperçois votre feu et je viens dessus.

17h49 "Ici CF QIO. Suis maintenant en vol et je vais me poser au lac Lynn dans cinq minutes.

17h49 "Ici CF WMM. Suis maintenant en vol; je vais suivre CF QIO."

17h58 Les deux avions de retour au lac Lynn. Terminé. Journal Aeradio du Lac Lynn. 6 novembre 1974.

Think Celsius/Pensez Celsius



SECRETARY OF THE WEEK
LA SECRÉTAIRE DE LA SEMAINE



Joan A. Scharf, secretary for the Victoria Marine Services Base was named Secretary of the week by CFAX radio. She is seen here at work wearing proudly the Citation Rose.

Mlle Joan Scharf, secrétaire au service de la marine de la région de Victoria, a été nommée secrétaire de la semaine (17-24 février 1975). On la voit ici au travail arborant avec fierté les roses du mérite.



TRANSPORT RECREATION ASSOCIATION

The 1974 Ministry of Transport Touch Football Team won the Civil Service Recreation Association (R.A.) Touch Football Championship in interdepartmental league competition this year with an impressive 17-2 record. For this achievement each member of the team received an R.A. tankard suitably inscribed.

Here John Abson, the manager and coach of the 1974 team presents O.G. Stoner, the then Deputy Minister with one of the R.A. Tankards as an expression of thanks for his continued interest and support. Jim Hurd, chairman of the Sports Committe, TRA and team member looks on.

Four of the present team members were on the 1969 championship team which received awards from Mr. Stoner at that time.

L'ASSOCIATION RÉCRÉATIVE DES TRANSPORTS

L'équipe de "Touch football" du ministère des Transports a gagné en 1974 le championnat de la ligue interministèrielle de l'Association récréative de la Fonction publique (A.R.) avec une fiche impressionnante de 17 victoires contre 2 défaites. En récompense de cette brillante réussite, chacun des joueurs à reçu une chope de l'A.R. portant l'inscription appropriée.

On peut voir sur la photo M. John Abson, directeur et entraîneur de l'équipe de 1974 offrir une des chopes de l'A.R. à M. O.G. Stoner, sous-ministre, pour le remercier de son soutien. Sur la photo de gauche on peut voir M. Jim Hurd, président du Comité des sports de l'ART qui faisait partie de l'équipe.

La photo de droite nous montre quatre joueurs de l'équipe championne de 1969 qui reçoivent un trophée des mains de M. Stoner.

Suggestion Awards/Primes à l'initiative

Douglas S. Gallin of Victoria, B.C. was granted an award of $780. for a suggestion that eliminated double cargo handling of cargo on the C.C.G.S. "Camsell".

M. Douglas S. Gallin, de Victoria, C.-B., a reçu une prime de $780 pour une suggestion qui a permis d'éliminer la double manutention de la cargaison sur le "CAMSELL", navire de la Garde côtière canadienne.

Mr. Stan R. Chapley of Winnipeg, Manitoba received a supplementary award of $500. for suggesting a Printed Circuit Board Interface Test Unit. The unit is used to test printed circuit boards by telecommunications.

M. Stan R. Chapley, de Winnipeg, Manitoba, a reçu une prime supplémentaire de $500 pour avoir suggéré l'utilisation d'un appareil d'épreuve de circuit imprimé. Cet appareil est utilisé pour éprouver les plaques de circuits imprimés par télécommunication.

Russel G. Awde	Aurora, Ont.	580.
David F. Brundage	Ottawa, Ont.	475.
Edward J. Leidl	Vancouver, B.C. Supplementary/Supplémentaire	430.
Richard W. McCaffrey	Edmonton, Alta.	420.
Robert C. Hagell	Truro, N.S./N.-É.	415.
John Neil Hines	Dartmouth, N.S./N.-É.	415.
Robert B. McIntyre	Charlottetown, P.E.I./Î.-P.-É.	385.
Sam Salvatore Sirna	Victoria, C.-B./B.C.	320.
George A. Johnson	Erin, Ont.	245.
Frank Moohs	Snelgrove, Ont.	200.
William Maurice Howes	Ottawa, Ont.	200.
Geraldine Ardice Turner	Moncton, N.B.	165.
Karl Aigner	Chomedey, Qué.	120.
W.D. Ross	Thunder Bay, Ont.	120.
Morris M. Sochan	Thunder Bay, Ont.	120.
Robert C. Thingstad	Thunder Bay, Ont.	120.
Albert Jacob Yackel	Calgary, Alta.	110.
Robert E. Smith	Dramalea, Ont.	$60.00 and/et 100.
Rein Andreson	Kenora, Ont.	100.
Daniel J. Polishak	Port Hardy, Ont.	100.
John C. Harris	Rexdale, Ont.	90.
Lawrence A. Fraser	Vancouver, B.C.	90.
Alexander S. McNaughton	Manotick, Ont.	90.
Alan A. Ladd	Lyn, Ont.	90.
Gilberthe H. Mathe	Wilson's Corner, Qué.	80.
Jacques Fortin	Cité des Deux Montagnes, Qué.	75.
John C. Vereyken	Winnipeg, Man.	70.
Marian Williams	Edmonton, Alta.	70.

Bruce Alan Shattock	Port Hardy, B.C./C.-B.	60.
Guy G.L. Grignon	Chomedey, Qué.	60.
Alain Émile Comeau	Yarmouth, N.S./N.-É.	$ 50.
Lewis S. Allan	Saint John, N.B.	50.
Donald Munavish	Mississauga, Ont.	50.
Bienvenido Gordon	Montréal, Qué	50.
Norman K. Webster	Regina, Sask.	50.
Joseph Rémi Vachon	Chateauguay, Qué.	50.

The wild-eyed wheel-spinner

This immature bird would quickly be an extinct species if left uncontrolled. A hybrid of several breeds, it can be quickly identified by its extra-wide track landing gear and wildly decorated plumage. Usually flying very low at near sonic speeds in heavy traffic or restricted speed areas; its approach can be heard for some time before its arrival. A variety of calls distinguish this specimen from other less exotic breeds. On take-off it utters a piercing shriek, much like the sound of rubber spinning on concrete. This is accompanied by a thunderous sound similar to the mating call of a wounded Brontosaurus. Usually trailing a plume of blue fog, this species is often followed by the red-flashing black-and-white bird. Although often grounded for anti-social behaviour, the wild-eyed wheel-spinner often makes peculiar and hazardous landings against trees, buildings and unfortunately, other less aggressive species.

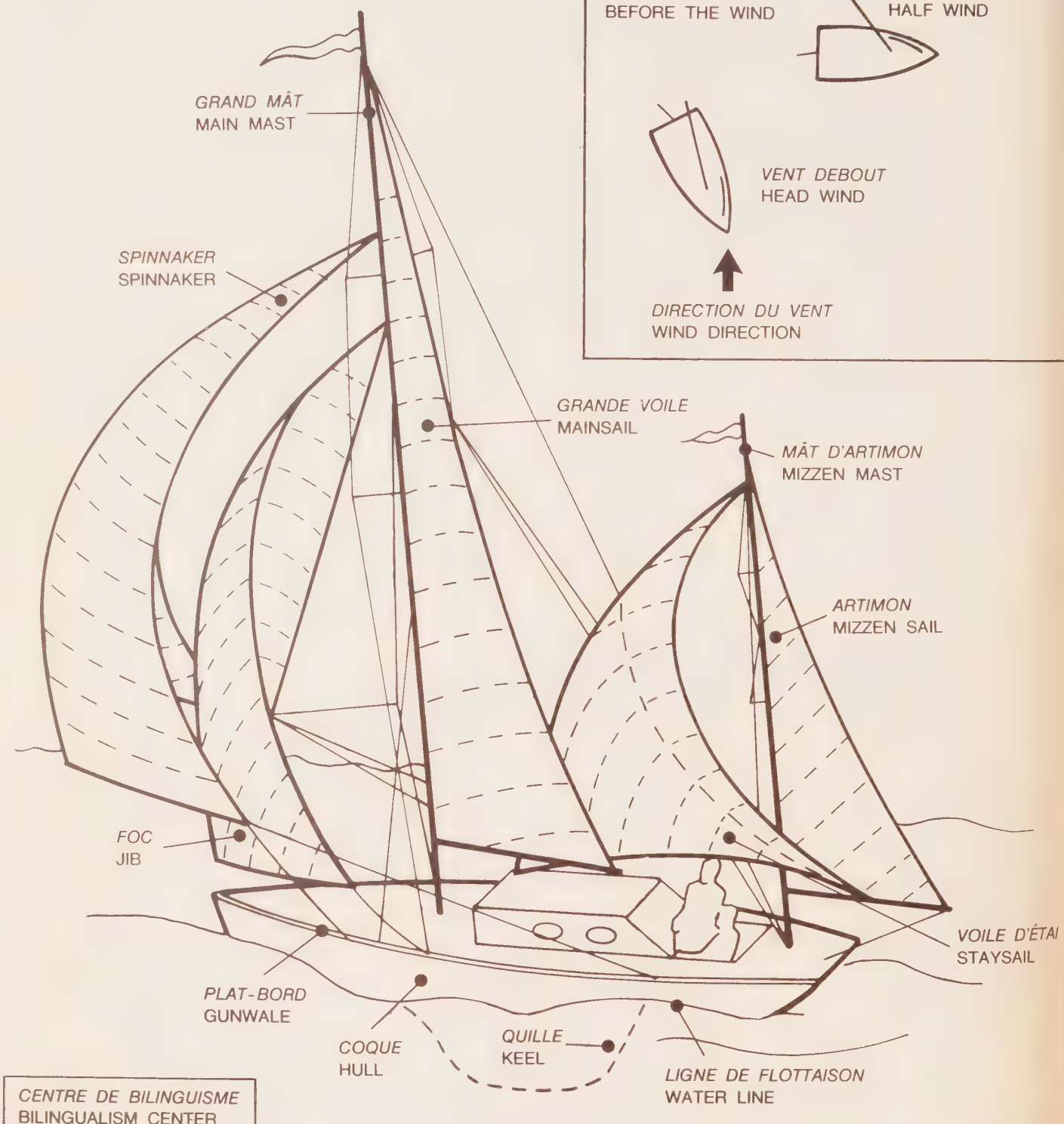
Le Martin – Chauffard

Il s'agit d'un volatile écervelé qui fera bientôt partie des espèces disparues si personne n'y met bon ordre. Produit hybride de plusieurs croisements, on le reconnaît du premier coup d'oeil à son train d'atterrissage extra large et à son plumage criard. Il vole ordinairement en rase-motte à des vitesses presque soniques parmi le trafic dense ou dans les zones à vitesse limitée et on l'entend venir de très loin. Il possède une variété de cris qui le distinguent des espèces courantes. Au décollage, il émet un crissement qui rappelle beaucoup le bruit du caoutchouc dérapant sur le béton, accompagné d'un grondement imitant le cri de détresse d'un Brontosaure en rut. Habituellement suivi d'un panache de fumée bleue, ce type d'oiseau traîne souvent dans son sillage le patrouilleur noir et blanc à huppe rouge clignotante. Parfois accusé de comportement antisocial, il fait souvent d'étranges et dangereux atterrissages contre des arbres, des bâtiments et, malheureusement, des congénères plus paisibles.



POUR VOUS AND ME

EN VOILIER
SAILING



CENTRE DE BILINGUISME
BILINGUALISM CENTER



At a reception on April 30, the Ministry of Transport honoured O.G. Stoner (right) who has been Deputy Minister of Transport since 1969. He was presented with an Eskimo print by the Honourable Jean Marchand (centre), Minister of Transport. Sylvain Cloutier (left), the new Deputy Minister was on hand for the presentation. Mr. Stoner goes to the Department of Industry, Trade and Commerce, replacing the retiring Deputy Minister J.F. Grandy.

Lors d'une réception le 30 avril dernier, le ministère des Transports a rendu hommage à M. O.G. Stoner (à droite) qui a été sous-ministre au ministère depuis 1969. L'honorable Jean Marchand, ministre des Transports (au centre), lui a remit une gravure esquimaude. M. Sylvain Cloutier, le nouveau sous-ministre (à gauche), était présent. M. Stoner succède au sous-ministre de l'Industrie et du Commerce, M. J.F. Grandy, qui prend sa retraite.



Mr. Joseph Abramson retired recently from the Ministry of Transport. He joined the public service in 1949 and has been a legal officer for the Ministry since 1955. An informal gathering was held in January. Here Joe and his wife, Adele and his daughter Marsha relax during the festivities.

M. Joseph Abramson a récemment pris sa retraite du ministère des Transports. M. Abramson a débuté en 1949 à la Fonction publique. Depuis 1955 il occupait un poste d'officier légal. Une réunion intime a eu lieu en l'honneur du retraité. On le voit ici en compagnie d'Adèle son épouse et de sa fille Marsha.



SYLVAIN CLOUTIER

DEPUTY MINISTER OF TRANSPORT
SOUS-MINISTRE DES TRANSPORTS

Sylvain Cloutier, who became Deputy Minister of Transport May 1, has been a public servant since 1953, when he joined the Department of National Revenue as an income tax auditor.

Born in Trois-Rivieres, Quebec, in 1929, he grew up in Ottawa and attended Ottawa University, graduating in 1949 with degrees of Bachelor of Arts and Bachelor of Philosophy. He obtained Master's degrees in Commerce and Accounting from the University of Montreal, 1952 and 1953. In 1955 he was granted a Master's degree in Business Administration from Harvard University.

From 1955 to 1965 Mr. Cloutier served in various departments and agencies of the Government of Canada, in such functions as management consultant, financial administration, personnel management and industrial relations.

In 1965 he was appointed a member of the Public Service Commission of Canada. Mr. Cloutier returned to the Department of National Revenue early in 1970 as Deputy Minister for Taxation. This followed three years as Deputy Secretary of the Treasury Board.

In September of 1971 Mr. Cloutier became Deputy Minister of National Defence.

Mr. Cloutier was admitted to the Quebec Institute of Chartered Accountants in 1953, and since 1958 has been a member of the Institute of Public Administration of Canada. He is currently an Honorary Governor of the Institute of Internal Auditiors.

Mr. Cloutier married Denyse Sauvé of Ottawa in 1953. They have two children, Guy and Sylvie.

Monsieur Sylvain Cloutier qui le ler mai a été nommé sous-ministre au ministère des Transports est au service de la Fonction publique du Canada depuis 1953, date à laquelle il est entré au ministère du Revenu national en qualité de vérificateur d'impôts.

Né à Trois-Rivières (Québec) en 1929, Monsieur Cloutier a passé sa jeunesse à Ottawa. Il a fréquenté l'Université d'Ottawa où il a obtenu en 1949 un baccalauréat ès arts et un baccalauréat en philosophie. En 1952, l'Université de Montréal lui a décerné une Maîtrise en commerce et en 1953, une Maîtrise en comptabilité. L'Université de Harvard lui a octroyé en 1955 le grade de "Master in Business Administration".

De 1955 à 1965, il a exercé diverses fonctions dans plusieurs ministères et organismes du Gouvernement du Canada, soit comme conseiller en gestion, soit comme spécialiste dans les domaines de l'administration financière, de la gestion du personnel et des relations industrielles.

En 1965, il a été nommé membre de la Commission de la Fonction publique du Canada et il est devenu sous-secrétaire du Conseil du Trésor en 1967. Monsieur Cloutier est retourné au ministère du Revenu national en tant que sous-ministre pour l'impôt au début de 1970 et il a quitté ce poste le ler septembre 1971 pour accéder à celui de sous-ministre de la Défense nationale.

Monsieur Cloutier est membre de l'Institut des comptables agréés de Québec depuis 1953 et de l'Institut d'administration publique du Canada depuis 1958. Il est présentement un Gouverneur Honoraire de l'Institut des vérificateurs internes.

Monsieur Cloutier a épousé Mlle Denyse Sauvé d'Ottawa en 1953. Ils ont deux enfants, Guy et Sylvie.

NATIONAL TRANSPORTATION WEEK: CAREERS DAY, JUNE 13, 1975.





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Gordon Thomas

Cover Photo

Two of the more than 300 students attending the Ministry of Transport Training Institute (MOTTI) each day, relax between classes on the Ottawa campus. Both Carol Verrault (left) of Pointe Gatineau, Que., and Alison Wiens of Burnaby, B.C., are studying for careers as radio operators.

Deux de quelque 300 étudiants fréquentant chaque jour l'Institut de formation du Ministère des Transports (MOTTI) se détentent entre les cours sur le campus d'Ottawa, Carol Verrault (à gauche) de Pointe Gatineau (Qué.) et Alison Wiens de Burnaby (C.-B.) étudient en vue de devenir opérateurs radio.

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CONTENTS/SOMMAIRE

MESSAGE 3

MOT TRAINING INSTITUTE 4

L'INSTITUT DE FORMATION DU MINISTÈRE DES TRANSPORTS 9

IF YOU CAN'T MIX 'EM, SEPARATE 'EM 15

À CHACUN SON CHEMIN 17

THIS ISN'T YOUR ORDINARY RAILROAD 19

MARINE COMMUNICATIONS 21

TRANSCAN/MINIREPORTAGES 23

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Message from the deputy-minister

Message du sous-ministre

Sylvain Cloutier

This is an exciting time to be associated with transportation in Canada and I am particularly delighted to be involved in the challenging work that lies ahead for all of us in the Ministry.

The new transportation policy and initiatives announced in June by the Minister will have beneficial implications for all Canadians.

We must now undertake the task of implementing the new policy. Our prime objective in doing so must be that of meeting the needs of people. If we keep this uppermost in our minds then our task will be that much more satisfying.

In broad terms, the Government is committed to eliminating inequities in the transportation system by taking an active part in ensuring that Canadians in our more remote areas receive a high standard of transportation services.

It is our responsibility to make it work.

Therefore, in the months ahead, I will expect your full cooperation and from what I have seen during my short time here, I know that it will be forthcoming.

We in the Ministry face an exciting challenge. If we approach it with the right attitude there is no doubt in my mind that we will achieve all our objectives.

S'occuper des transports au Canada à notre époque est fort intéressant et je suis particulièrement ravi de participer au travail enrichissant qui nous attend tous au Ministère.

Tous les Canadiens profiteront des avantages qu'apporteront les nouvelles politiques et initiatives en matière de transports annoncées en juin par le Ministre.

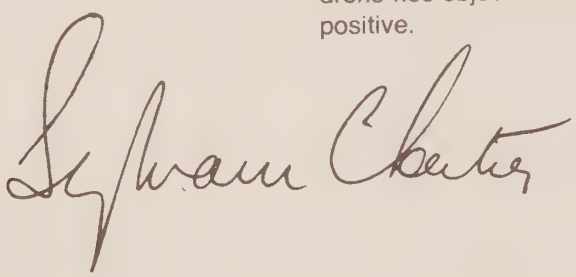
Nous devons maintenant nous vouer à la tâche de mettre en oeuvre cette nouvelle politique. Notre objectif premier doit être de répondre aux besoins de la population et si cette idée domine notre pensée, nous serons d'autant plus satisfait de notre travail.

En termes généraux, le gouvernement s'est engagé à éliminer la disparité qui existe dans le système de transport en assurant aux Canadiens qui vivent dans les régions les plus éloignées du pays des services de transport de haute qualité.

La réalisation de ce projet nous incombe.

Je m'attend donc à ce que vous m'accordiez votre entière collaboration dans les mois à venir et d'après ce que j'ai vu jusqu'à ce jour au Ministère, je sais que je peux compter sur vous.

Nous, au Ministère, devons relever un défi fort intéressant. Je suis assuré que nous atteindrons nos objectifs si nous adoptons une attitude positive.



MOT TRAINING INSTITUTE



photos by Rankin, Frazer

by Catherine Lesslie

Mark Twain once said, "Training is everything. The peach was once a bitter almond; cauliflower is nothing but cabbage with a college education."

Fruit and vegetables aside, so it is with transportation. Training *is* everything. All the safe, efficient and economic high-speed trains, jumbo jets and supertankers will be of little use to Canadians without the skilled personnel to operate and service them.

At the temporary campus for the Ministry of Transport Training Institute (MOTTI) on Heron Road in Ottawa, potential radio operators, air traffic controllers, electronic technicians, meteorological technicians and senior management staff stream to and through the facility's modern training program, ensuring a future supply of Canadian transportation personnel.

The Ministry of Transport, which has over 7,000 people employed in uniquely skilled operations, is combining its diverse training functions under one roof. A major portion of Coast Guard College training will continue to be given at North Sydney in Nova Scotia.

It is a novel approach to transportation training. Few countries in the world have consolidated their training procedures to this extent.

Many Ministry training functions were fragmented and dispersed in terms of location. With the complexity of training demands, procedures and equipment, federal involvement in transportation and the swing to increased intermodality, the move to combine training operations reflects the needs of Canadian transportation.

According to John Hughes, the Training Institute's Director of Administration, there is more than bricks, mortar, convenience and economy involved. There is the whole question of training as an independent but related activity.

Terry Porter, Director of Development for the Institute, says the exciting thing about Heron Road is that all the functional and operational problems can be spotted and dealt with before the Institution moves to its permanent location in Cornwall in 1978.

Another advantage is that the actual working environment can be experienced and improved. As Mr. Porter says, "It is like building from the

inside out; you know the activity that must go on and the environment it requires, then you design the shell around it."

Answering a Need

By 1971, it was clear that new centralized facilities were needed to meet the training requirements of the Ministry, the provinces, industry and labour and at that time it was decided to construct the main campus in Cornwall and build a new Coast Guard College in Cape Breton.

Besides identifying the needs, developing design briefs, and being the overall representative during construction, the development team was responsible for the consolidation and integration of training procedures at the interim campus on Heron Road in Ottawa.

Pioneering in the Training Field

Heron Road represents a new era in transport training. There is no handy blueprint or pattern for the evolution of a centralized system of transportation training. Much of the necessary pioneering process is taking place at the interim campus where more than 2,500 students a year will filter through the Institute, benefitting from sophisticated training programs. While being paid to learn in a modern environment, the students can work towards a specific career goal.

Total Learning Environment

The Institute is unique in that it brings together managerial and technical staff on the same campus. It also allows for the daily interaction of people from different sectors of the transportation field. At the Institute, there is the desire to encourage learning through this student interaction in the non-programmed part of the day. Such contact promotes a broad understanding of the intermodal factors and elements in transportation.

The very "live-in" nature of the campus demands attention be given to the "after-five" life of the student. Despite a high turnover with some courses lasting only two days while others take some 26 weeks, and a wide age range of 18 to 55, athletic programs and intramural activities are being established along with theatre facilities and a student/faculty lounge. All is designed to promote relaxation and social situations as part of the education process.

Air Traffic Services Training School

The training of air traffic controllers has become increasingly sophisticated since the first national school opened in 1959 at the terminal buildings in Ottawa International Airport.

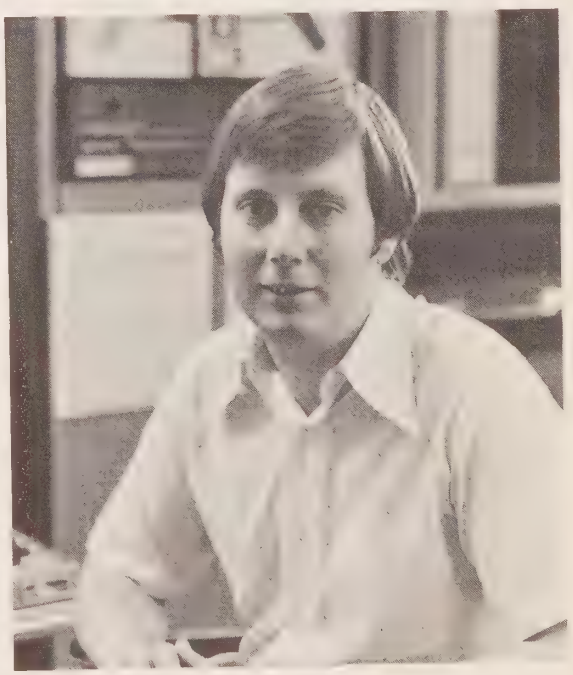
The first tower simulator consisted of spots of light beamed onto a ceiling by students playing the role of pilot. Today the simulators look just like the real thing.

A confrontation simulator with video screens allows students to deal with unusual or emergency situations. An aircraft simulator permits students to act as pilots, hearing a controller's voice and experiencing the sensations of flight.

An intensive practical course for both tower controllers (VFR) and en route controllers (IFR) runs for 68 working days. After the first four days the students spend one day in the classroom and one day in the simulator putting what they learn into practice.

Keeping Pace with the Working World

Joe Nelson, Chief Instructor for Air Traffic Services Training, considers the simulators as close to reflecting real working conditions as possible. In Air Traffic Control, as in other training programs, the approach of learning by doing still applies. The Institute recently acquired a simulator and equipment to train students in the operations of the Joint-En-Route Terminal Systems ensuring students are trained in the latest procedures.



Dave Anderson of Vancouver is training as a Data System Co-ordinator. He previously was an air traffic controller in the Vancouver area.



Steve Beleznay of Sandspit, B.C. is training to be a communications technician at A.T.C



Meteorological student recording weather data



Telecom Computer Training

Meteorological Training

The Atmospheric Environment Service (AES) of the Department of the Environment trains meteorological technicians for its service and radio operators and air traffic controllers in meteorology for the Ministry of Transport at MOTTI.

Otto Andres, Superintendent of Meteorology Training, emphasizes the cooperative aspect of AES in training Transport air traffic controllers and radio operators.

Students on meteorological training learn to perform the important function of collecting raw data on the weather, preparing forecasts and tailoring the information to meet the requirements of various consumers: press, radio, TV, government agencies, transportation, forestry, agriculture and other weather-sensitive industries. The provision of domestic and international aviation data is a major responsibility.

This year, the training staff will have trained over 400 meteorological technicians and radio operators, 200 air traffic controllers as well as provided advanced and specialized training for approximately 1,225 senior meteorological technicians.

Telecommunications Training

This faculty was formed in 1960 by the Telecommunications and Electronics Branch in the Air Administration and was later integrated into the Air Services Training School.

There are now approximately 1,450 electronic technicians and 1,100 radio operators employed in the Ministry, the latter receiving their initial training and the former their advanced training at MOTTI.

Members of the telecommunications faculty give training in electronic systems, radio operations and systems maintenance. There are 35 different courses, which vary in length from two days to 26 weeks. Nearly all students are employed by the Air and Marine Telecommunications and Electronics Bureau of Transport Canada.

The students are training for vital roles that ensure the safe operation of transportation in Canada. With their training in morse code, international communication procedures, and telex operations, the radio operators can assume responsibility for maintaining air and marine communication links by sending and receiving messages, soliciting weather information and remaining constantly alert for emergency messages.

Art Seymour, Manager, Telecommunications faculty describes the impact of telecommunications training as far-reaching in the transportation field, with graduates from the telecommunications school maintaining and operating a wide range of services from the high arctic to weather ships in the Pacific Ocean.



Stan Forzley of Winnipeg, Man. is taking meteorological technician training specifically in the area of surface observation.



Rita Hurley of Fredericton, N.B., is an air traffic control trainee. She hopes to gain experience, become an IFR controller and eventually return to MOTTI as an instructor.

The Transportation Management Training Centre

The Transportation Management Training Centre currently conducts a senior six-week transportation course which brings together senior managers from the Ministry, Crown Corporations, the provinces and the transportation industry. The course is a broadening experience and is designed to give participants an appreciation of the multi-modal nature of Canadian transportation, as well as the social, economic and environmental factors which influence the decision-making process in the field of transportation.

The Centre has also developed a series of three-day support modules in such subjects as employee relations, project management and financial management.

Feasibility studies are now under way to determine the need for intensive intermediate transportation training and to provide a base for the outward looking studies in the senior level courses.

The Management Centre will be a focal point for transportation education in Canada, conducting a wide variety of courses in transportation technology and intermodal transportation management. Cooperative ventures with Canadian universities are expected to encourage the development of a wide variety of courses and programs for transportation managers and professionals.

Canadian Coast Guard College

Opened in 1965, the Canadian Coast Guard College at Point Edward trains female and male deck and engineering officers for the fleet. It offers a three-year course in marine sciences for graduates of Grade 12 or the equivalent.

After graduation, officer cadets join the fleet to complete the qualifying sea service required for certification.

The Ministry of Transport Training Institute in Cornwall will offer a year of advanced studies for higher certification and specialized knowledge in the field of ice mechanics, oceanography, pollution control and prevention, and ergonomics (human engineering).

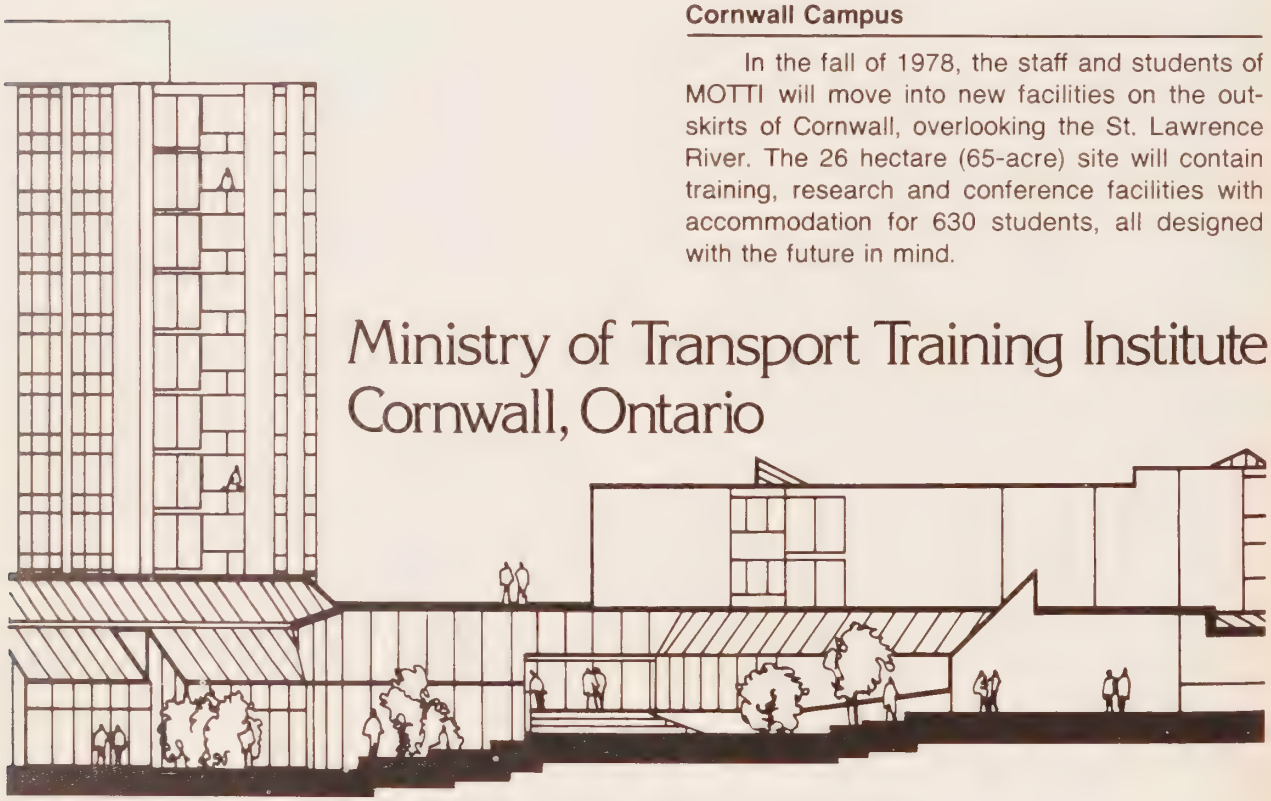
The new facility will be equipped with a number of laboratories in material sciences, electronic navigation and electrotechniques.

North Sydney Campus

A long-term lease with the Cape Breton Development Corporation (DEVCO) will give the Ministry of Transport a 145-acre tract of land known as Petersfield Common, on which to build the new Coast Guard College. Since 1965 the College has occupied wartime buildings at Point Edward, N.S. The new complex will include training laboratories, classrooms, a machine shop, cafeteria and residences.

Cornwall Campus

In the fall of 1978, the staff and students of MOTTI will move into new facilities on the outskirts of Cornwall, overlooking the St. Lawrence River. The 26 hectare (65-acre) site will contain training, research and conference facilities with accommodation for 630 students, all designed with the future in mind.



Ministry of Transport Training Institute
Cornwall, Ontario

INSTITUT DE FORMATION DU MINISTÈRE DES TRANSPORTS



par Catherine Lesslie

Mark Twain disait: "La formation (professionnelle) est une chose fondamentale. Avant d'être un fruit juteux, la pêche était une amande amère, et le chou-fleur n'est qu'une forme élaborée du chou."

Il en est de même pour les transports. La formation est ce qui compte. Tous les trains sûrs, efficaces et économiques qui roulent à grande vitesse, les avions géants et les superpétroliers ne seraient guère utiles aux Canadiens s'il n'y avait un personnel qualifié pour les faire fonctionner et pour les réparer.

Sur le campus provisoire de l'Institut de formation du ministère des Transports (MOTTI) situé sur le chemin Héron à Ottawa, les futurs opérateurs de radio, les contrôleurs de la circulation aérienne, les techniciens en électronique, les techniciens en météorologie et les cadres supérieurs suivent des programmes de formation modernes, assurant ainsi l'approvisionnement futur en personnel aux transports.

Le Ministère, qui emploie plus de 7,000 personnes dans des domaines spécialisés, est en train de rassembler ses différents centres de formation sous un même toit. Seule une partie importante de la formation du personnel du Collège de la garde côtière continuera d'être donné à North Sydney (N.-É.).

Il s'agit là d'une nouvelle façon d'envisager la formation en matière de transports. Très peu de pays ont jusqu'à maintenant unifié leurs méthodes de formation de cette façon.

Au Ministère, la formation a été fragmentée et dispersée du point de vue géographique. Compte tenu du caractère complexe des besoins en formation, du processus et du matériel, de la participation du gouvernement fédéral au domaine des transports et du passage vers une intermodalité croissante, l'effort en vue de réunir les différentes activités de formation est à l'image même des besoins des transports au Canada.

Selon M. John Hughes, directeur de l'administration à l'Institut de formation, il n'y a pas que les briques, le mortier et les côtés pratiques et économiques. Il y a surtout le problème de la formation comme activité autonome mais connexe.

M. Terry Porter, directeur du service de

développement à l'Institut, ajoute que le côté intéressant de l'Institut de formation réside dans le fait que les problèmes pratiques et techniques pourront êtres déterminés et résolus avant l'installation définitive à Cornwall, en 1978.

Comme deuxième avantage il y a le fait qu'on peut étudier et améliorer les présentes conditions de travail. Comme le dit M. Porter: "Nous suivons le processus inverse; nous déterminons d'abord ce qu'il y a à faire et ensuite nous construisons."

Les besoins

En 1971, tous étaient convaincus qu'il fallait de nouvelles installations centralisées pour satisfaire les exigences du ministère, des provinces, de l'industrie et de la main d'oeuvre. C'est alors qu'on prit la décision de construire un campus principal à Cornwall et un nouveau Collège de la garde côtière au Cap-Breton. On a alors formé une équipe de projet qui devait déterminer les besoins, présenter les conceptions techniques et être le seul représentant pendant les travaux de construction. Cette équipe a aussi été chargée de la consolidation et de l'intégration des programmes de formation à l'institut provisoire, situé sur le chemin Héron à Ottawa.

Innovation en matière de formation

L'Institut de formation des transports représente une nouvelle ère dans la formation en matière de transports. Il n'existe pas de schéma pour orienter l'évolution d'un système centralisé de formation en transports. Le travail de pionnier s'effectue à l'Institut provisoire où plus de 2,500 étudiants par année tirent profit des programmes avancés de formation de l'Institut. Les étudiants reçoivent un traitement en même temps qu'ils approfondissent leurs connaissances dans des installations modernes; cela leur permet d'orienter leur travail en vue d'une carrière précise.

Milieu favorable à la formation

Notons d'abord un aspect exclusif à l'Institut; le campus regroupe à la fois administrateurs et techniciens. Cet aspect favorise les rencontres entre les personnes provenant des différents secteurs du domaine des transports. L'Institut encourage l'échange de connaissances issu des rapports sociaux qui s'établissent entre les étudiants en dehors des heures de cours. De tels rapports facilitent la connaissance du vaste domaine des facteurs connexes et des éléments du monde des transports.

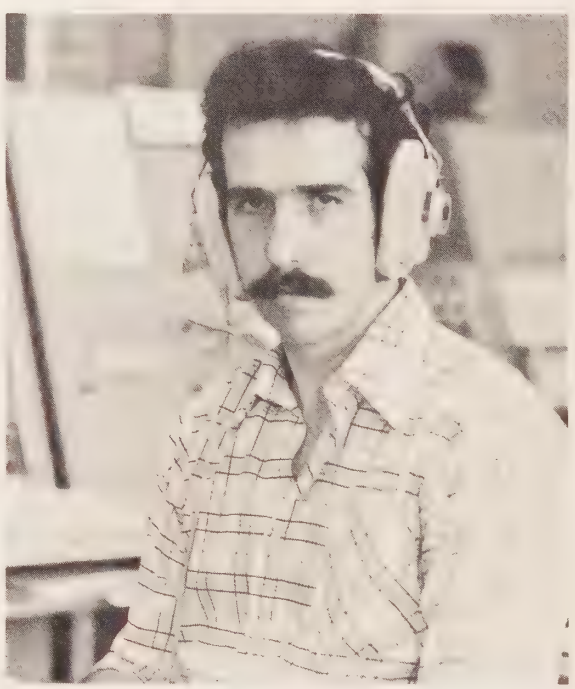
La nature des plus sociales du campus accorde beaucoup d'importance aux activités parascolaires des étudiants. Malgré la durée très courte de certains cours, certains durant deux jours seulement, alors que d'autres durent 26 semaines, et l'écart d'âge pouvant exister entre les stagiaires, il existe à l'Institut des activités sportives et intramurales ainsi qu'un amphithéâtre et un salon pouvant accueillir les moniteurs et les étudiants. À l'Institut on fait en sorte que les loisirs et les rapports sociaux fassent partie intégrante de la formation.

École des services de contrôle de la circulation aérienne

La formation des contrôleurs de la circulation aérienne est devenue chose raffinée depuis l'ouverture, en 1959, de la première école canadienne dans les derniers locaux de l'Aéroport international d'Ottawa.

Le premier simulateur de tour consistant en des projecteurs que des étudiants, jouant le rôle de pilote, orientaient vers le plafond. De nos jours les simulateurs sont beaucoup plus réalistes.

Un simulateur témoin muni d'écrans vidéo permet à l'étudiant de connaître des situations particulières ou des cas d'urgence. Un simulateur d'avion d'essai permet à l'étudiant de jouer le rôle de pilote; il entend la voix des contrôleurs et ressent les sensations du vol.



M. Normand Ropin suit un cours d'opérateur radio. Il croit que ce cours intensif est très enrichissant.



Contrôle du traffic aérien — simulateurs non-radar.

Un cours pratique intensif d'une durée de 68 jours est donné aux contrôleurs de tour (VFR) et aux contrôleurs en route (IFR). Après les quatre premiers jours, les étudiants vont aux cours pendant une journée et passent la suivante dans le simulateur, mettant ainsi leurs connaissances en pratique.

Préparation au milieu de travail actuel

M. Joe Nelson, l'instructeur en chef de l'école de contrôle de la circulation aérienne est d'avis que les simulateurs sont une réplique à peu près identique des conditions dans lesquelles les contrôleurs devront travailler. Dans le contrôle de la circulation aérienne, tout comme dans les autres programmes de formation, l'apprentissage pratique demeure une méthode efficace. Dernièrement, l'Institut a fait l'acquisition d'un matériel qui permettra d'initier les étudiants aux relais de visualisation des phases enroute et terminales du contrôle de la circulation aérienne (JETS); ainsi les étudiants seront formés aux procédures les plus récentes.

Formation en météorologie

Le Service de l'environnement atmosphérique (SEA) du ministère de l'Environnement enseigne la météorologie aux techniciens en météorologie pour les besoins de son service, aux opérateurs de radio ainsi qu'aux contrôleurs de la circulation aérienne pour le ministère des Transports à l'Institut de formation du MDT.

M. Otto Andres, le surintendant de la formation en météorologie, met l'accent sur l'aspect coopératif du SEA concrétisé par la formation des contrôleurs de la circulation aérienne et des opérateurs de radio du ministère des Transports.

Les étudiants qui suivent ces sours de météorologie apprennent à recueillir des données brutes sur le temps, à établir des pronostics et à regrouper les renseignements selon les besoins des clients: les mass-média, les organismes du gouvernement, les transports, les exploitations forestières, le ministère de l'Agriculture et des entreprises dont le succès dépend des conditions atmosphériques. La tâche de fournir des services



Des opérateurs radio dans les classes de l'Institut de formation.



Des techniciens en électronique en séance d'études pratiques.

météorologiques à l'aviation nationale et internationale en est une des plus importantes. Cette année, les instructeurs formeront plus de 400 techniciens en météo et opérateurs de radio, ainsi que 200 contrôleurs de la circulation aérienne; de plus ils donneront une formation avancée et spécialisée à environ 1,225 techniciens supérieurs en météo.

Formation en télécommunications

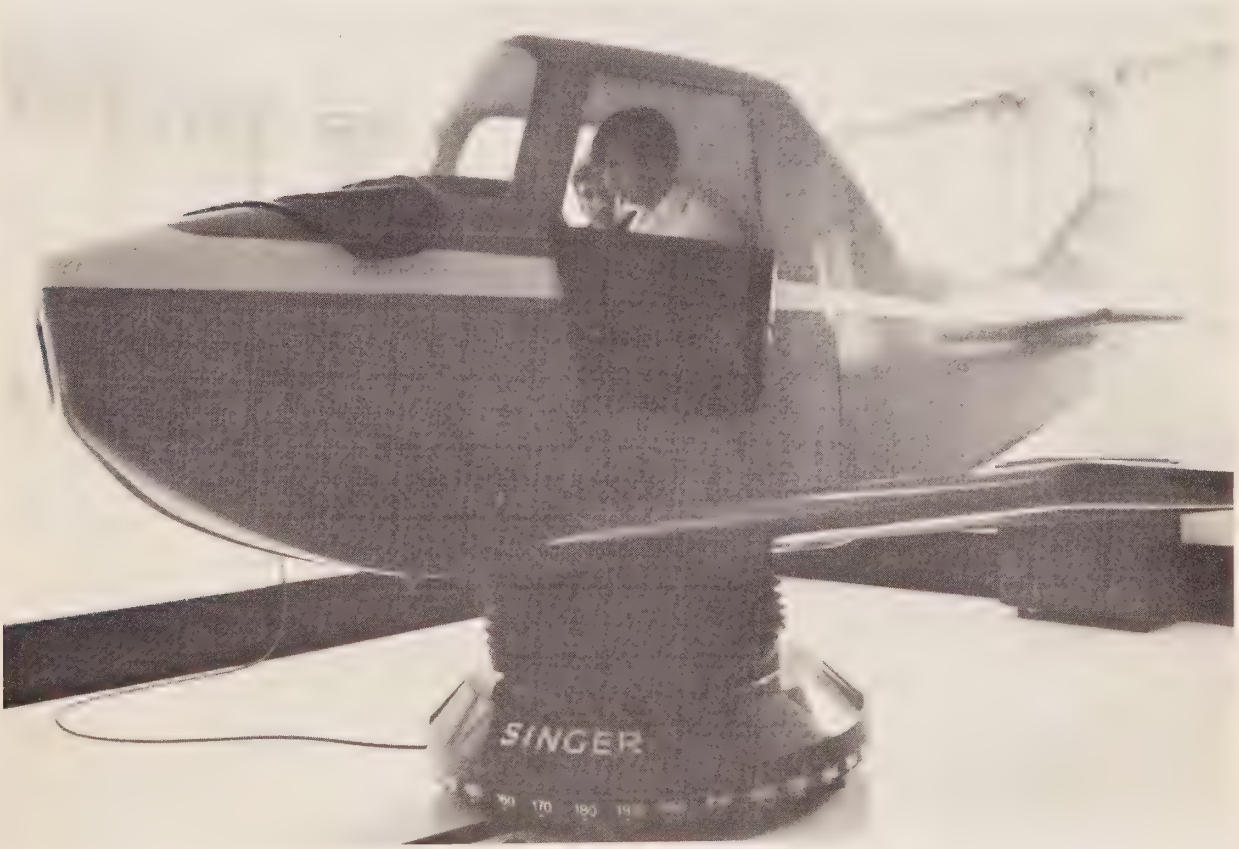
L'École des télécommunications a été créée en 1960 par la Direction des télécommunications et de l'électronique; elle a été par la suite reliée à l'École des Services de l'Air.

Le Ministère emploie présentement à peu près 1450 techniciens en électronique et 1100 opérateurs de radio. Les techniciens reçoivent leur première formation, et les opérateurs suivent des cours avancés à l'Institut de formation du ministère des Transports.

Les professeurs de télécommunications enseignent trois matières: les systèmes électroniques, les opérations radio et l'entretien des systèmes. Il existe 35 cours différents dont la durée va de 2 jours à 26 semaines. Presque tous les étudiants sont employés par le Bureau des télécommunications de l'électronique de l'air et de la marine du ministère des Transports.

La formation que reçoivent présentement les étudiants les prépare au rôle essentiel qu'ils auront à jouer afin d'assurer la sécurité dans l'exploitation des transports au Canada. Les opérateurs de radio reçoivent une formation sur l'exploitation des télex, le code morse et les procédures internationales de communication; ils pourront donc établir des communications aériennes et maritimes en émettant et en recevant des messages, en demandant des renseignements sur la météo et en gardant l'écoute pour les messages d'urgence.

M. Art Seymour, gestionnaire des cours de l'école des télécommunications définit la formation en télécommunications comme étant de grande portée dans le domaine des transports du fait que les diplômés de l'école des télécommuni-



Des étudiants acquièrent l'expérience de base dans des simulateurs de vol.

cations assurent la continuité et le bon fonctionnement d'un vaste éventail de services, que ce soit dans le grand Arctique ou dans l'océan Pacifique à bord de navires météorologiques.

Le centre de formation à la gestion des transports

Le Centre de formation à la gestion des transports offre régulièrement un cours avancé de 6 semaines sur les transports. Ce cours réunit les grands administrateurs du Ministère, des sociétés de la couronne, des provinces et de l'industrie des Transports. Il est fort enrichissant et a pour but de sensibiliser les stagiaires à la nature multimodale des transports canadiens et aussi aux facteurs sociaux, économiques et écologiques qui influent sur la prise de décisions dans le domaine des transports.

Le Centre a également mis au point une série de modules de 3 jours dans les matières suivantes: les relations de travail, la gestion des projets et la gestion financière.

On est présentement à étudier la possibilité et la nécessité d'implanter un cours de formation intensive en transports et de jeter les bases d'un cours plus avancé au niveau supérieur.

Le Centre deviendra un foyer important en éducation des transports au Canada. Il dispensera divers cours en technologie des transports et en gestion des transports intermodaux. On s'attend à ce que la collaboration avec les universités canadiennes favorise la mise au point d'une grande variété de cours et de programmes pour les administrateurs des transports et les experts en la matière.

Collège de la Garde côtière

Le Collège de la Garde côtière a ouvert ses portes, sans discrimination de sexe, en 1965, à Point-Edward. Il vise à former des officiers de pont et des officiers mécaniciens pour servir au sein de la Garde côtière. Le Collège offre un cours de trois ans en sciences de la mer à des jeunes gens qui possèdent un diplôme de 12è année ou l'équivalent.

Après avoir reçu leur diplôme, les élèves-officiers se joignent à la flotte pour y faire le service en mer requis pour l'obtention d'un certificat.

L'Institut de formation du MDT à Cornwall offrira des cours avancés d'une durée d'un an pour des certificats supérieurs et des connaissances spéciales en mécanique de la glace, en océanographie, dans la lutte contre la pollution, dans la prévention de la pollution et en ergonomie



Mlle Francine Lefebvre de Valleyfield (Québec) entend se spécialiser en observation de la haute atmosphère. Elle s'est inscrite au cours de technicien en météorologie.

(étude technique du corps humain).

Les nouvelles installations seront dotées de laboratoires de sciences physiques, de navigation électronique et d'électrotechnique.

Campus de North Sydney

Un bail à long terme signé avec la Société de développement du Cap-Breton (DEVCO) donnera au ministère des Transports un terrain de 145 acres connu sous le nom de Pitsfield Common. C'est sur ce terrain que sera construit le nouveau collège de la Garde côtière. Depuis 1965, le collège occupait des locaux datant de la guerre, à Point-Edward en Nouvelle-Écosse. Le nouveau collège sera équipé de laboratoires, de salles de cours, d'un atelier, d'une cafétéria et de résidences.

Campus de Cornwall

Au cours de l'automne 1978, le personnel et les étudiants de l'Institut de formation du ministère des Transports s'installeront dans de nouveaux locaux situés dans la banlieue de Cornwall et donnant sur le Saint-Laurent. Le nouvel emplacement de 26 hectares (65 acres) logera des installations de conférence, et de recherche en formation en réservant l'espace nécessaire pour abriter 630 étudiants. On a planifié en fonction de l'avenir.



by Bill Dunstan

Light and heavy aircraft don't mix — but they may certainly come in contact!

Since Canada's 14,000 aircraft and some 44,000 licensed pilots tend to congregate in the larger population areas, such an event was becoming a possibility. So Terminal Radar Service Areas (TRSA) were introduced.

To cut down the potential of an aircraft collision, MOT is setting up TRSA in some of our busiest flight areas where new procedures are followed to guide and safeguard light aircraft, which navigate by sight, from possible conflict with heavier, faster, instrument-guided planes.

The new look (or "lookout!") in air traffic control is being introduced by means of a skilfully crafted audio-visual presentation produced by the National Film Board.

Toronto, Vancouver and Winnipeg each has a TRSA in full flight. Montreal will follow suit in October with TRSA's around Dorval and Mirabel. Other areas to be included are Ottawa, Edmonton and Calgary.

The program is particularly interesting because it was planned and developed with the active co-operation of all segments of the aviation family — especially pilots and air traffic controllers. Its introduction has been a carefully prepared and introduced educational program to gain the understanding and full co-operation of both groups.

Separate audio-visual programs were prepared for pilots and air traffic controllers to meet their separate requirements. Briefing officers attended the showings to conduct discussions and answer questions.

The first TRSA was established at Toronto last November, followed by Vancouver in December, and Winnipeg in February. In addition to these areas, courses are conducted in various centres where private pilots may have occasion to fly into a TRSA. Explanatory VFR Terminal Area Charts describing the service are offered by United States briefing offices to VFR pilots planning a trip into Canada. Canadians can obtain these charts

from the Canadian Map Office, Department of Energy, Mines and Resources, Ottawa.

A.R. Novakowski, Superintendent Rules and Procedures, Air Traffic Services, led the task force that developed the system and the educational program.

"We had three choices", he says. "We could provide legislation to sterilize airspace around major terminal areas so that only IFR aircraft could operate there. This would inconvenience pilots of light aircraft and assault their rights and freedom, for even with satellite airports to accommodate VFR craft, light planes ordinarily would have occasion to fly through such air space.

"If we did nothing, we would take the risk of midair collisions as traffic continued to build up. And it would be just a matter of time until they occurred.

"We took the third choice, setting up TRSA's which establish flight procedures that reserve separate air space for each of the two aircraft categories.

"Co-operation has been excellent throughout the program. Everyone was glad to help us with the study and now, after a carefully-planned educational program to ensure understanding, the TRSA's are operating successfully."





À CHACUN SON CHEMIN

par Bill Dunstan

Les avions légers et les avions lourds ne se mêlent pas, mais ils peuvent certainement entrer en contact!

Les 14,000 avions ainsi que les 44,000 pilotes licenciés du Canada ont tendance à se rassembler dans les régions où la population est la plus dense; la possibilité de collisions était des plus grandes lorsqu'on a mis sur pied le système de Régions terminales à service radar (TRSA).

Afin de réduire les risques de collision en plein vol, le ministère des Transports établit actuellement des Régions terminales à service radar dans les régions les plus fréquentées où l'on suit de nouvelles procédures pour guider et protéger les petits avions VFR et les empêcher de nuire aux avions IFR, plus lourds et plus rapides.

Le Ministère présente cette innovation en contrôle de la circulation aérienne à l'aide d'un montage audio-visuel, humoristique, mais réalisé avec habileté, produit par l'Office national du film.

Toronto, Vancouver et Winnipeg disposent d'un système TRSA complet. En octobre, le système sera en usage à Montréal, plus particulièrement à Dorval et à Mirabel. Ottawa, Edmonton et Calgary suivront plus tard.

Le programme d'implantation du TRSA offre un intérêt particulier: il a été planifié et mis au point avec la coopération active de tous les secteurs de l'aéronautique, plus particulièrement des pilotes et des contrôleurs de la circulation aérienne. La mise en oeuvre du TRSA a fait l'objet d'une préparation minutieuse marquée par des programmes d'éducation afin de s'assurer de la compréhension et de l'entière collaboration des pilotes et des contrôleurs.

On a présenté des programmes audio-visuels distincts pour les pilotes et pour les contrôleurs étant donné la nature différente de leur travail. Des agents d'information assistaient également aux représentations afin de tenir des entretiens et de répondre aux questions.

C'est à Toronto, au mois de novembre, qu'a été mis en service le premier système TRSA. Vancouver et Winnipeg ont suivi en décembre et

en février. De plus, des cours sont offerts dans diverses localités où les pilotes privés peuvent à l'occasion voler dans une région désignée TRSA. Aux États-Unis des cartes explicatives sur les régions terminales VFR sont offertes aux pilotes VFR qui prévoient entreprendre un voyage au Canada. Les pilotes canadiens peuvent se procurer ces cartes au Bureau des cartes du Canada, ministère de l'Énergie, des Mines et Ressources, Ottawa.

M. A.R. Novakowski, surintendant, Règles et procédures, Services de la circulation aérienne, a dirigé le groupe de travail responsable de la mise au point du système et du programme d'enseignement.

"Nous avions trois possibilités, de dire M. Novakowski. Nous pouvions faire des règlements réservant l'espace aérien autour des grandes régions terminales aux seuls avions IFR, ce qui nuirait aux pilotes d'avions légers en plus de brimer leurs droits et leur liberté. Même avec des aéroports satellites pour accueillir les avions légers, ces derniers devraient, à l'occasion, traverser cet espace aérien".

Ne rien faire n'aurait qu'augmenté les possibilités de collisions en vol vu la croissance de la circulation. Ce n'aurait été qu'une question de temps.

Nous avons donc choisi la troisième possibilité qui consistait à mettre sur pied des systèmes TRSA prévoyant des procédures de vol attribuant un espace aérien distinct à chacune des deux catégories d'avions.

Durant tout le programme la collaboration de tout le monde s'est révélée excellente. Nous avons obtenu l'aide de tous pour effectuer l'étude du programme; maintenant que le système est bien connu, suite au programme d'éducation soigneusement planifié, nous pouvons affirmer que le système TRSA fonctionne à merveille".



THIS ISN'T YOUR ORDINARY RAILROAD



by Charles Pratt

Cet article relate l'histoire d'une ligne de chemin de fer, celle de la Baie d'Hudson, longue de 500 milles, depuis Winnipeg jusqu'à la baie, qui mit 50 ans à être complétée.

Fifty years to build a railway only 500 miles long? It really must have been a tough one!

Indeed, the actual construction of the Hudson Bay Railway was tough going, but equally as rugged was the work carried out in meeting halls, board rooms and Parliamentary lobbies ... 43 years out of the fifty.

The original charter for the Hudson Bay Railway was issued in 1880. It was to connect Winnipeg to The Pas and York Factory at the mouth of the Nelson on the Bay. On the map it looked like an easy route. No mountains, no difficult river crossings. Just rolling brush land and tundra. Ideal railroad country in fact.

For nine years shares were sold, stocks were issued and bonds sold, but not a single tie was laid. Then William Mackenzie and Donald Mann entered the picture. These two swashbuckling entrepreneurs have a special place in Canadian railway history and probably should be called the founders of the Canadian National.

By 1896 they had made a start on the Bay Route, building 120 miles of track from Gladstone, on the CPR, to Winnipegosis at the foot of the lake of the same name. Twenty years later, the two controlled a 10,000 mile network composed of 221 lines running from Vancouver to the St. Lawrence. More than 7,000 miles had been built by themselves, the remainder picked up at bargain basement prices from other companies.

Mackenzie and Mann's Canadian Northern network had never been planned, but its haphazard growth had a logical pattern. Wherever there was a defunct charter or a bankrupt company which carried a land grant, a cash subsidy or a government bond guarantee, the two would not be far away.

Perhaps the lines they built differed widely from the routes initially proposed, but they went ahead and built them. They continued the Bay route, swinging in to the Northwest territories to Hudson Bay Junction and reached The Pas in 1908. There they wisely decided to stop.

But in 1908 there happened to be a federal election and both major parties, responsive to the demands of western farmers for a shorter sea route to the European markets and to break the alleged monopoly of the Canadian Pacific, assured voters that the line would be completed to the Bay.

The election over, little was done except to study the merits of the Nelson River against that of the Churchill as the future ocean terminus for prairie grain. Despite adverse engineering reports, the tortuous delta at the Nelson was selected and, in 1911, a contract was let for the first 100 miles in that direction.

Another election, a change in government, and work on the Bay route was brought to a halt. But outraged pressure from the western members caused the new government to relent and work was resumed. By the end of the 1914 construction season track had been laid to Mile 214 and rough grading had reached Mile 332, only 92 miles from the sea.

But then the war and, after that, the unstable political climate of the 1920's stopped all work on the Bay route. Gradually the wilderness took back what had only been claimed temporarily. For twelve long years only the fortnightly "Muskeg Special" broke the northern silence with its eerie whistle.

For the trappers and miners of Flin Flon, Sheridan and points north, the Muskeg Special was a godsend, but for the prairie farmers it wasn't a Hudson Bay Railway. In 1924 they formed the "On To The Bay" Association and in 1926 the Federal Government again promised to complete the line.

Major Leslie Charles of the Canadian Army, with a party of 25 men and 60 sled dogs, set out in the winter of 1927 to complete the survey to the newly selected Port at Churchill. In the summer of '28, under the direction of CNR engineer Claude Johnson, 3,000 men fought the muskeg, swamp, blackflies and mosquitos to within 60 miles of Churchill.

At the end of the 1928 construction season, Johnson decided to gamble and, with gravel pits and muskeg both frozen hard, decided to lay the balance of the line on the frozen surface. Ballasting could wait until the following summer.

That last 60 miles made railway history. It was the only major railway without a roadbed. But the job was done and the last spike finally driven on April 23, 1929, almost 50 years to the day of issuing the first charter.

There are many stories told of the difficulties experienced during that mad year of construction. Men drowning in the freezing rapids of the Nelson, of wading neck deep in the mud, of whole sections of track disappearing into the muskeg overnight, and of advance parties getting lost only hundreds of yards from camp and freezing to death.

As you take today's "Muskeg Special", the regular excursion train from The Pas, stopping for berry picking at choice spots, passing through or stopping, if you want, at Wekusko, Thicket Portage, Winvenhoe, O'Day, M'Clintock and Lamprey, its easy to see that this, indeed, isn't your ordinary railroad. It's the Hudson Bay Railway!

Marine Communications

by Roger Levett

Communications in Canada's remote high Arctic has been pushed from the age of the morse code key to a satellite long distance telephone call.

The Ministry of Transport's Marine Administration now blankets most of the Canadian eastern Arctic shipping lanes with a Marine Telephone system which can connect a ship in Barrow Strait with a telephone anywhere in the world via the Telesat-owned Anik Satellite. Marine telephone shore stations are now in operation at Resolute Bay, Coral Harbor, Frobisher Bay and Churchill.

Previously there was a limited service at Frobisher using a radio voice signal to Goose Bay and a service farther south at Churchill where there are telephone land lines.

The new service at Resolute Bay, Coral Harbor and Frobisher Bay is a vast improvement in terms of quality and coverage area due to the satellite. Churchill is on conventional land lines.

The satellite call involves a radio voice call from the ship to a shore station which then puts the signal into the Bell system. From there the call is put through Anik, then back onto conventional Bell lines and on to its destination.

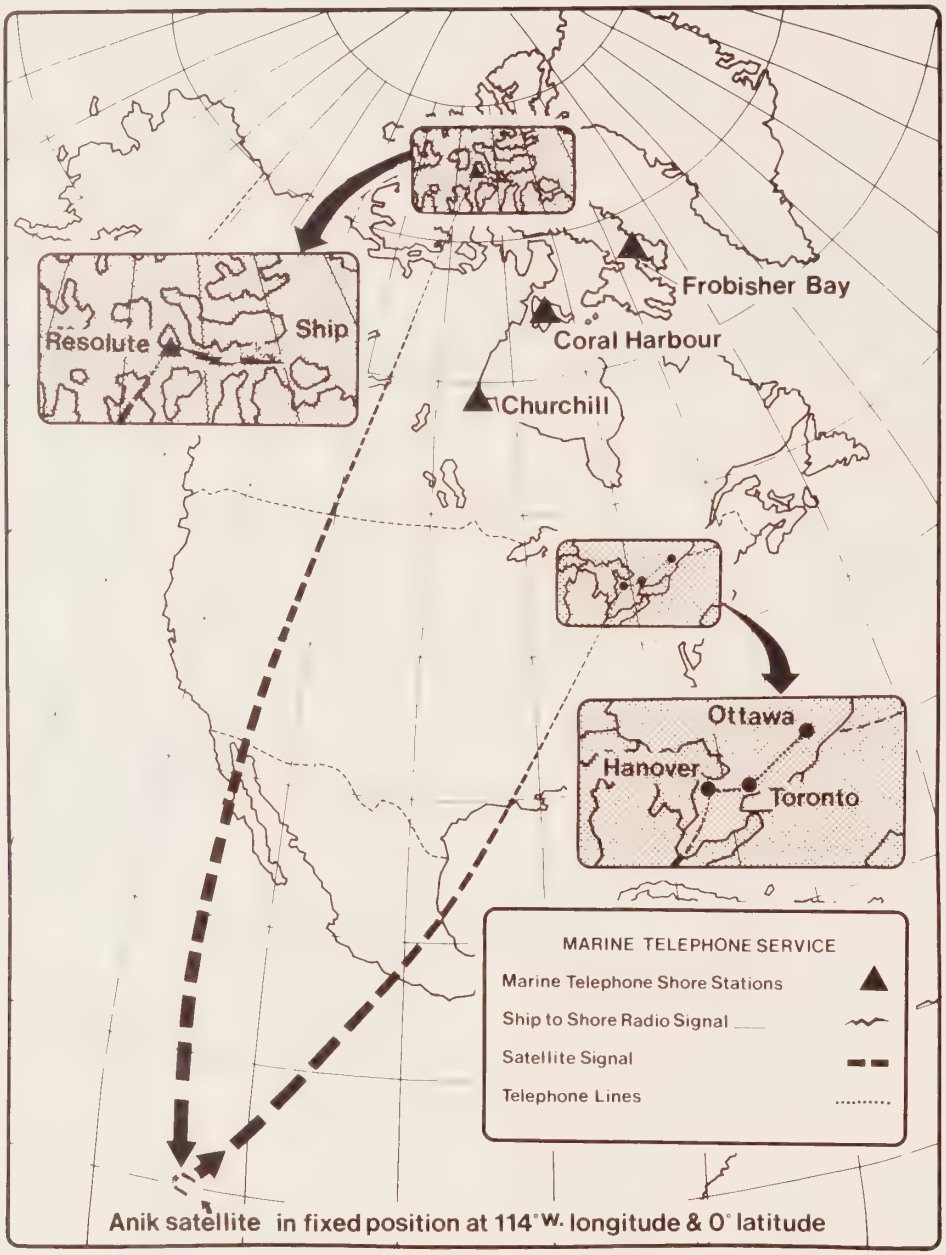
Previously, when a radio voice call went out from a ship to Resolute or Coral Harbor and in some cases to Frobisher, it had to be converted to a morse code message if it was to go on to another city. While the exchange of several teletype or morse messages might take hours, a telephone connection now takes only a few minutes.

The first marine radio call from the Arctic via Anik came in August when the Imperial Bedford, a 250 foot long oil tanker owned by Imperial Oil, was put through to the Imperial Oil office in Toronto. The voice signal travelled 50,000 miles through conventional and satellite circuits before the connection was made.

Previously, the mainstay of communications from Government and commercial ships in the Arctic was handled by morse code. Under the old system reliability of radio telephone could break down after only a few hundred miles. Today, however, the voice signal is picked up by the shore station and piped straight into the Bell system, thus connecting the ship to any point in the world with a signal as clear as a personal local call in Canada.

The system means resupply operations of northern communities are now supported by fast efficient communications. Commercial shipping benefits both from a business point of view and from a personal point of view if a crew member must be moved or reach a relative in an emergency.

Cost is also a significant factor, as MOT charges for a long-distance Marine telephone call are only slightly more than a conventional long-distance call.





The *CCGS Alexander Henry*, a light icebreaker, operates out of Parry Sound, Ontario. The vessel was built at Port Arthur Shipbuilding and launched in 1959.

This lighthouse and buoy supply ship is named after Alexander Henry, fur trader and writer.

Le *NGCC Alexander Henry* est un brise-glaces léger qui est basé à Parry Sound (Ontario). Le navire a été construit par la Port Arthur Shipbuilding et mis en opération en 1959.

Le phare et le navire portent tous deux le nom d'Alexander Henry, commerçant en fourrures et écrivain.



Water 'n' Steak

by

David Austin
Regional Public Affairs,
Winnipeg

Beneath the sinking sun, with the famous mountain profile of the "Sleeping Giant" to the east and the silhouette of Thunder Bay's grain elevators to the west, the *CCGS Alexander Henry* made her way through chunks of ice to her night berth at Keefer Terminal.

Below deck the chief cook, Ida Gorgill, was preparing dinner steaks to order for members of the galley staff who would soon set about to serve officers and crew, when the ship's supply officer Edna Hawke came in. Both chief cook and supply officer knew the steaks, a weekly treat in the *Henry,* would be well received by all. "We give them lots to eat and that's one of the main ways to keep them happy", says Mrs. Hawke.

She has some insight into keeping the crew of the *Alexander Henry* happy, for she has served on the vessel since 1959 when the ship was commissioned.

Like so many other innovations, the appointment of Mrs. Hawke as the first woman officer of the Canadian Coast Guard was a matter of evolvement rather than overnight transition: "I joined in 1952 as a waitress on an MOT ship where my mother and father were cooking. They served on ships for 18 years. It was a family tradition. When it came time for promotion, I was next in line for supply officer and it was kind of expected. I never paid much attention to it."

Mrs. Hawke points out that several women will graduate from the Canadian Coast Guard College in Sydney, Nova Scotia next year as deck officers, so her position below decks soon may not be unique. The Coast Guard already has one female deck hand on the West Coast and a waitress serves on one of the Pacific weather ships.

Mrs. Hawke is responsible for the paperwork and administration of her section, including the ordering of food and supplying of furnishings and provisions for the *Henry's* crew of 35. With her staff of six she supplies the essential lifeline of the crew — food to eat. Last winter she spent three weeks at the Ministry of Transport's Training Institute in Ottawa on a logistics course for supply officers, all male except Mrs. Hawke.

Mrs. Hawke does not find her work extraordinary. "My world has been mostly full of men." "After all I raised two sons", she says with a chuckle. One son is with the Ontario Provincial Police in Kenora, Ontario; the other is a foreman with RCA in Midland, Mrs. Hawke's hometown. She spends her holidays in Midland and the remainder of the year with the *Henry* in Thunder Bay and Parry Sound, the icebreaker's two station points.

The Captain of the *Henry* is John McDonald, a Coast Guard veteran who has spent most of his career on the Atlantic Coast. "She is probably more lenient with her staff than I may be", he says of the Chief. "But I have no complaints", he says. "Just look around and you can see the woman's touch aboard."

Mme Hawke est la première femme à être officier à bord d'un navire de la Garde côtière canadienne. Elle est aú ministère des Transports depuis 1952 et elle a su imposer sa marque.

TRANSPORTATION MAN OF THE YEAR

L'HOMME DES TRANSPORTS DE L'ANNÉE

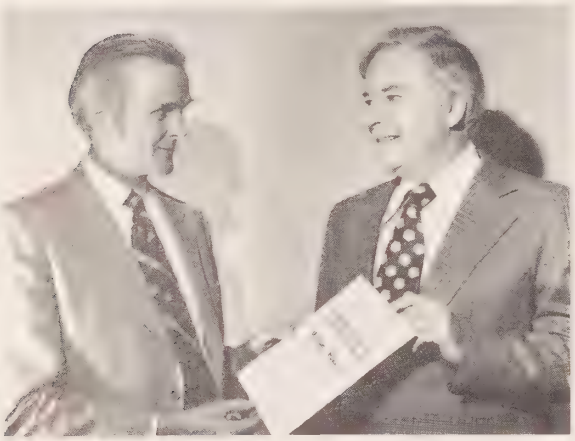


Raymond A. Hadfield of Victoria, B.C., left, was presented with a plaque by Transport Minister Jean Marchand at the National Transportation Week dinner in Winnipeg, June 10. The citation reads, "...in recognition of his outstanding contribution toward transportation development and progress in Canada." Mr. Hadfield retired recently as head of the Motor Vehicle Branch of the B.C. Department of Transportation and Communications after 43 years in the field of motor transport administration.

M. Raymond A. Hadfield de Victoria en Colombie-Britannique s'est vu remettre par le ministre des Transports, M. Jean Marchand, une plaque reconnaissant "ses services pour sa contribution très spéciale envers le monde des transports". La cérémonie a eu lieu durant la Semaine nationale des Transports à Winnipeg le 10 juin dernier.

M. Hadfield qui a pris sa retraite récemment a été pendant 43 ans dans le domaine de l'administration des transports par véhicules automobiles au ministère des Transports et des communications de la Colombie-Britannique.

Dan R. Epple	Sault-Ste-Marie Ont.	60.
Brian R.W. Tughan	Ottawa Ont.	90.



Mr. William Maurice Howes, right, of the Aircraft Accident Investigation Branch received a $200 award for a suggestion which reduces the manhours involved in accident report production. Mr. Howes was presented with a certificate by Hart Finley, the Director of the newly-formed Aviation Safety Bureau. The Bureau amalgamates the Aviation Safety division and the Aircraft Accident Investigation division of the Air Administration.

M. William Maurice Howes du service d'enquête des accidents d'avion a reçu une prime à l'initiative de $200.00 pour une suggestion qui a eu pour effet de réduire le nombre d'heure de travail nécessaire à la production des rapports d'accidents d'avions. M. Howes, à droite, s'est vu remettre un certificat par M. Hart Finley, directeur du nouveau bureau de la sécurité aéronautique. Ce bureau réunit la division de la sécurité de l'aviation et la division des enquêtes des accidents d'avions de l'administration de l'Air.



A Suggestion Award presentation was made at the Airport Facilities Branch Council meeting on June 17, 1975. Messrs. J. Crapelle and A.H. Paterson were presented cheques of $500.00 by Phil Bowes in recognition of the adoption of their joint suggestion for an ultraviolet radiation system for garbage storage rooms. From left to right front row — Phil Bowes, Acting Director, Airport Facilities Branch, J. Crapelle, A.H. Paterson — back row — L. Hunter, Chief, Surface Structures Division, R. Campbell, Chief, Environment Division.

Le 17 juin dernier on a procédé à une présentation de primes à l'initiative lors de la rencontre du conseil de la division des installations aéroportuaires. MM. J. Crapelle et A.H. Paterson se sont vu remettre chacun un chèque de $500.00 par M. Phil Bowes pour avoir suggéré en coopération l'adoption d'un système de radiation ultra-violette pour les chambres d'entreposage à déchets. De gauche à droite, sur la première rangée, nous voyons M. Phil Bowes, directeur adjoint suppléant, division des installations aéroportuaires, M. J. Crapelle, M. A.H. Paterson, Sur la seconde rangée dans le même ordre nous voyons M. L. Hunter, chef à la division des bâtiments de surface, M. R. Campbell, chef du bureau de l'environnement.

Thomas Kelly	Victoria B.C./C.-B.	90.
Wellington Gavin	Pierrefonds Qué.	100.
Douglas S. Callin	Victoria B.C./C.-B.	100.
J.J. Jacques Beaupré	Notre-Dame-des-Laurentides Qué.	100.
Lilianne Marcoux	Lucerne Qué.	125
Allan O. Slade	Coppermine T.-N.-O./N.W.T.	
Richard Stephen Levie	Toronto Ont.	350.

awards / primes

A FIRST FOR TIMMINS

UNE PREMIÈRE POUR TIMMINS



Timmins Airport is the first airport in Canada where pre-flight weather information by aeradio operators has been introduced on an official basis. (Previously, aeradio personnel performed only weather observation functions). Seven aeradio operators from Timmins became qualified to provide this service recently by completing a special weather information course conducted by the Atmospheric Environment Service (AES) at MOTTI in Ottawa. On hand at the ceremony marking the event were, left to right, regional MOT Telecommunications manager Bryan Walsh of Toronto, AES Superintendent Bob Graham, MOT Chief of Field Operations, Duncan Grant and MOT regional representative John Angelo. Aeradio Operator Ed Hartery sits at the console.

Other men to qualify were Gordon Bennett, George Fera, John Mawdsley, Harry More, John Sholdice and Glen Wheeler.

L'aéroport de Timmins est le premier au Canada où la transmission des informations météorologiques préalables au vol par les opérateurs des stations radioaéronautiques ait été officiellement réalisée. Auparavant, le personnel de la station radioaéronautique s'occupait seulement d'observation météorologique. Sept opérateurs de la station radioaéronautique de Timmins sont récemment devenus aptes à assurer ce service à la suite d'un cours d'information météorologique spécial dispensé par le Service de l'Environnement Atmosphérique (AES) à l'IFMDT à Ottawa. Participaient à la cérémonie d'ouverture, de gauche à droite, le gérant régional des télécommunications du MDT M. Bryan Walsh, de Toronto, le surintendant de l'AES M. Bob Graham, le chef des opérations locales M. Duncan Grant et l'agent régional du MDT M. John Angelo. M. Ed Hartery, opérateur radio, est assis devant le pupitre.

Les autres personnes qui se sont qualifiées pour ce poste sont MM. Gordon Bennet, George Fera, John Mawdsley, Harry More, John Sholdice et Glenn Wheeler.

the canadian coast guard graduation 1975

promotion de 1975 au collège de la garde côtière

On Saturday, May 30, the Canadian Coast Guard College, Sydney, Nova Scotia had its seventh graduation ceremony. There was a total of 21 graduating cadets — 11 engineers and 10 navigators. Roy Illing, Administrator of the Marine Transportation Administration, addressed the graduating class and presented the diplomas.

The graduating cadets were:

C'est le samedi 30 mai qu'a eu lieu la septième réception de remise des diplômes au Collège de la Garde côtière canadienne à Sydney (N.-É.). Quelque 21 cadets, 11 ingénieurs et 10 navigateurs se sont vu remettre des diplômes. M. Roy Illing, administrateur à l'administration de la marine a adressé la parole aux nouveaux officiers, et leur a présenté leur diplôme.

Parmi les diplômés, on remarque:

NAMES/NOMS	HOMETOWN/DOMICILES
Engineers/Machine	
BLANCHETTE, Glenn	St. Hubert, Québec
BROGAN, Kenneth	Pugwash, N.S./N.-É.
BUTTS, George	Truro, N.S./N.-É.
CIMON, Marc	Baie St. Paul, Québec
COTTLE, Wayne	Dartmouth, N.S./N.-É.
DUNDIN, Paul	Ottawa, Ontario
MARCOTTE, Gilles	Donnacona, Québec
MUISE, Michael	London, Ontario
TREMBLAY, Michael	Petawawa, Ontario
WHITE, Curtis	Sault Ste. Marie, Ontario
WILSON-BUSBY, Scott	Kimberly, B.C./C.-B.
Navigators/Pont	
BRUSDEILINS, Edwin	Niagara Falls, Ontario
CHARRIER, Raymond	St. Catharines, Ontario
DESGAGNES, Hubert	Montréal, Québec
HADLEY, Robert	Streetsville, Ontario
PARRY, Kevan	Belleville, Ontario
PONTBRIAND, Jean	St. Paul Abbotsford, Québec
ROSS, Myles	Malagash, N.S./N.-É.
TREMBLAY, Daniel	Ste. Thérèse, Québec
VANTHIEL, John	Regina, Saskatchewan
WILSON, Larry	Miscou Centre, N.B./N.-B.



Cadet Raymond Charrier gave the valedictory address.
Le cadet Raymond Charrier a prononcé le discours d'adieu.



Cadet Fern Walker receives the award for Best All-Round first year Cadet, from Roy Illing.
Le cadet Fern Walker reçoit le prix du meilleur cadet de première année des mains de M. Roy Illing.



The Inter-Governmental Maritime Consultative Organization (IMCO) Working Group on Novel Craft met in Ottawa May 12-16. Their task is to develop international safety standards for high speed craft, such as air cushion vehicles and hydrofoils.

John Doherty, Chief of the Ministry of Transport's Air Cushion Vehicle Division headed the Canadian delegation. Britain, France, the United States, Russia, Germany, Norway, and Italy were represented.

Le groupe de travail sur les nouveaux engins de l'Organisation intergouvernementale consultative de la navigation maritime (OMCI) s'est réuni à Ottawa du 12 au 16 mai afin d'élaborer des normes internationales de sécurité pour les engins rapides comme les aéroglisseurs et les hydroptères. Le Chef de la Division des véhicules à coussin d'air au ministère des Transports, M. John Doherty, présidait la délégation canadienne. La Grande Bretagne, la France, les États-Unis, l'URSS, l'Allemagne, la Norvège et l'Italie étaient représentés à cette réunion.



The Council of the International Civil Aviation Organization (ICAO) visited Ottawa in the peak of the tulip festival on May 22-23, 1975, on the invitation of the Secretary of State for External Affairs. Mr. Sylvain Cloutier, right, and Mr. W.H. Huck, left, are seen talking with the ICAO Council President, Mr. Walter Binaghi. The Council represents thirty countries in aviation. Mr. Binaghi, who recently announced his retirement, has served ICAO for 28 years and as President of Council since 1957.

M. W.H. Huck, administrateur à l'administration des transports aériens, M. Walter Binaghi, président du conseil de l'OACI, M. Sylvain Cloutier, sous-ministre.

Sur l'invitation du secrétaire d'état aux Affaires extérieures, le conseil de l'Organisation de l'Aviation civile internationale (OACI) a visité Ottawa les 22 et 23 mai à l'occasion du Festival des Tulipes.

M. Cloutier et M. Huck en ont profité, comme en atteste la photographie, pour discuter avec M. Binaghi, président du conseil de l'OACI. Le Conseil représente les 30 principaux pays du monde de l'aviation civile. M. Benaghi qui a récemment annoncé sa prise de la retraite, a oeuvré pendant 28 ans pour l'OACI et en est le président depuis 1957.

retirements / retraites



Charles Topple, a well-know figure around the Ministry of Transport's Marine Base, Dartmouth, N.S., has retired after serving as a member of the Canadian Coast Guard for 47 years.

Memories of years in the Coast Guard will linger for some time and first-hand information on the Coast Guard activities will still be a topic in the Topple household because he has two sons as serving members – John Charles, an oiler on the *CCGS Alert,* and Robert, a steward on the *CCGS Provo Wallis.*

Many changes have been made and ships passed into history since Mr. Topple joined the Ministry in 1928 as staffman and lightkeeper on Sable Island.

Charles Topple, left, is presented with a Canadian Coast Guard Coat-of-Arms by Captain G.J.M. Williams, District Manager, Dartmouth Marine Base. Also in the picture are two of his former Captains, Captain Vern Duncan, center, and Captain Claude Green, right.

M. Charles Topple, très connu à la base maritime du ministère des Transports de Dartmouth (N.-É.) a pris sa retraite après avoir été dans la Garde côtière pendant 47 ans.

Les souvenirs qu'il apporte avec sa prise de la retraite sont nombreux. Mais les informations de dernière heure continueront d'être sujets de discussion à la maison, puisque deux de ses fils sont membres de la Garde côtière, Jean Charles qui travaille à l'entretien sur le *NGCC Alert* et Robert, commissaire sur le *Provo Wallis.*

D'innombrables changements sont survenus, et nombreux sont les navires qui sont passés à l'histoire depuis que M. Topple est venu au ministère en 1928 alors qu'il était employé et gardien de phare sur l'Île de Sable.

M. Charles Topple (à gauche) se voit présenter les armoiries de la Garde côtière canadienne par le capitaine G.J.M. Williams, directeur régional de la base de Dartmouth. Nous observons aussi sur la photo, deux de ses anciens capitaines, le capitaine Vern Duncan (au centre) et le capitaine Claude Green (à droite).



Joe Bertalino (left), retired after 27 years as an airworthiness inspector with MOT at Vancouver. Mr. W.M. Johnson, Regional Controller, Civil Aviation, is shown presenting the farewell gift of a set of suitcases. Joe Bertalino has been involved in aviation for almost 50 years and his name appears on the Pioneer's Memorial plaque located in the Department Lounge of the Vancouver International Airport.

M. Joe Bertalino (à gauche) a pris sa retraite après 27 ans de service comme inspecteur d'aéronefs pour le MDT à Vancouver. M. W.M. Johnson, vérificateur régional du bureau de l'aviation civile présente à M. Bertalino un jeu de valise en souvenir. M. Bertalino a évolué dans le monde de l'aviation pendant près de 50 ans. Son nom est gravé sur la plaque des pioniers située dans la salle des départs de l'aéroport international de Vancouver.



Alex Ramsay, Chief of Building Structures Division in the Airport Facilities Branch, retired recently after many years of faithful service. Mr. Ramsay began his career with the Ministry of Transport in 1952 as Chief Architect. The 17 terminal buildings he was instrumental in creating involve airports from St. John's to Vancouver.

Left to right are Eric Winsor, Director General, Airports and Construction; Miss Caroly Ramsay, Alex Ramsay, Mrs. Enid Winsor, Dr. G.Y. Sebastyan and Mrs. Elsye Ramsay.

M. Alex Ramsay, chef de la division des bâtiments, aéroports et construction, a récemment pris sa retraite après de longues années de service. M. Ramsay a débuté au ministère des Transports en 1952 en tant que chef architecte. Il a aidé à construire 17 aérogares à travers tout le pays.

Nous observons sur la photographie (de gauche à droite) M. Windsor, M. Caroly Ramsay, M. Alex Ramsay, Mme Enid Windsor, le docteur G.Y. Sebastyan et Mme Elsye Ramsay lors de la réception d'adieu.

H.C. "Bert" King, right, has retired as Telecommunications Workshop Administrator, Moncton, N.B. A native of St. John's, Newfoundland, Mr. King worked in the Telecommunications Branch for the majority of his 25 years service with MOT. Mr. King, right, was presented with a plaque as well as other suitable gifts by T.H. Prescott, Atlantic Regional Air Administrator.

M. H.C. "Bert" King a récemment pris sa retraite en tant qu'administrateur de l'atelier des Télécommunications de Moncton (N.-B.). M. King, qui est originaire de St. Jean (T.-N.), a travaillé pour la division des télécommunications pendant la presque totalité des 25 ans qu'il a passés au M.D.T.. M. King (à droite) se voit offrir une plaque souvenir par M. T.H. Prescott, directeur régional de l'Atlantique.





Lloyd C. McElroy retired recently after 38 years of continuous service with the Ministry of Transport. At a party held in his honour in Ottawa, Alex Campbell, Director of Budgets and Financial Services, presented Mr McElroy with a certificate of appreciation from the Government of Canada signed by the Prime Minister. Mrs. Phyllis McElroy looks on as her husband accepts the certificate.

M. Lloyd C. McElroy a récemment pris sa retraite après 38 ans de loyaux services au ministère des Transports. Lors d'une réception tenue en son honneur à Ottawa, M. Alex Campbell, directeur du service financier et budgétaire, a remis à M. McElroy une attestation d'appréciation du gouvernement du Canada signée de la main du premier ministre. Mme Phyllis McElroy regarde son mari alors que le certificat lui est remis.



Rex Tilley, who served as deputy regional administrator and special projects officer with the Ministry of Transport's Atlantic regional office in Moncton for the past two years, retired from active service May 30.

A public servant with MOT for some 26 years, Rex joined the federal department in 1949 as a senior air traffic controller.

He held that position until 1952 when he became operations manager at Gander International Airport. Four years later, he was named airport manager.

In 1964, he took on the responsibilities of regional superintendent of airports and two years later was named regional manager of airports, a position held until 1973.

Active in drama for the past 10 years as both an actor and director, Rex plans on retiring to his native Newfoundland where he can spend his summer months on his favorite hobby — fishing.

M. Rex Tilley qui a été administrateur régional adjoint et officier de projets spéciaux pour le bureau régional de l'Atlantique du ministère des Transports s'est retiré le 30 mai dernier.

Au service du ministère des Transports et de la fonction publique depuis 1949, M. Tilley était entré comme contrôleur du traffic aérien. Il a gardé ce poste jusqu'en 1952 alors qu'il est devenu gérant des opérations à l'aéroport international de Gander. Quatre ans plus tard, il devenait gérant de l'aéroport.

En 1964, il a accepté la responsabilité du poste de surintendant régional aux aéroports à Moncton, et en 1966 il était nommé gérant régional des aéroports, poste qu'il a occupé jusqu'en 1973.

Passionné de théâtre, M. Tilley a été pendant les dix dernières années acteur et directeur de troupe. Il désire retourner sur son île natale de Terre-Neuve pour y pratiquer tout l'été son sport favori, la pêche.

Frank Weston, Regional Director Marine Services, Maritime Region was honored on his retirement by more than 160 friends and business associates at a Testimonial Dinner in Halifax, Nova Scotia.

Left to Right: K.C. Curren, Acting Regional Director Marine Services, Maritime Region; Frank Weston; Mrs. Eileen Stubbs, Mayor of Dartmouth; and W.A. O'Neil, Deputy Administrator Marine Services, Ottawa.

M. Frank Weston, directeur régional des services de la marine pour la région de l'Atlantique a récemment été l'invité d'honneur à une réception spéciale tenue à Halifax. Plus de 160 amis et collègues y ont assisté.

De gauche à droite nous voyons M. J.C. Curren, directeur suppléant des services de la marine, M. Frank Weston, Mme Eileen Stubbs, maire de Dartmouth, et M. W.A. O'Neil, administrateur adjoint des services de la marine à Ottawa.



1974 FIRE PREVENTION AWARDS

The Port of Halifax won the Class Award Plaque in the International Competition for the best Fire Prevention Program in Class "B" of any Government Facility or Agency in North America.

The Port of Halifax also won the Howard Green trophy by placing first in its class for the best Annual Fire Prevention Program by a multi-building complex of a Federal Government Civil Department or Agency. Mr. O.J. Timmins, the Fire Safety Officer, was responsible for the award-winning entry.

PRÉVENTION DES INCENDIES – GAGNANT DE 1974

Le port de Halifax a obtenu le premier prix du concours international pour le meilleur programme de prévention des incendies de classe'B' , concours ouvert à toutes les installations ou organismes gouvernementaux en Amérique du Nord.

Le port de Halifax a également mérité le trophée Howard Green en se classant au premier rang pour le meilleur programme de prévention des incendies dans un concours auquel participaient les complexes comportant plusieurs bâtiments de tout ministère ou organisme public fédéral. M. O.J. Timmins, agent des incendies, est l'auteur de ce programme.

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in memoriam

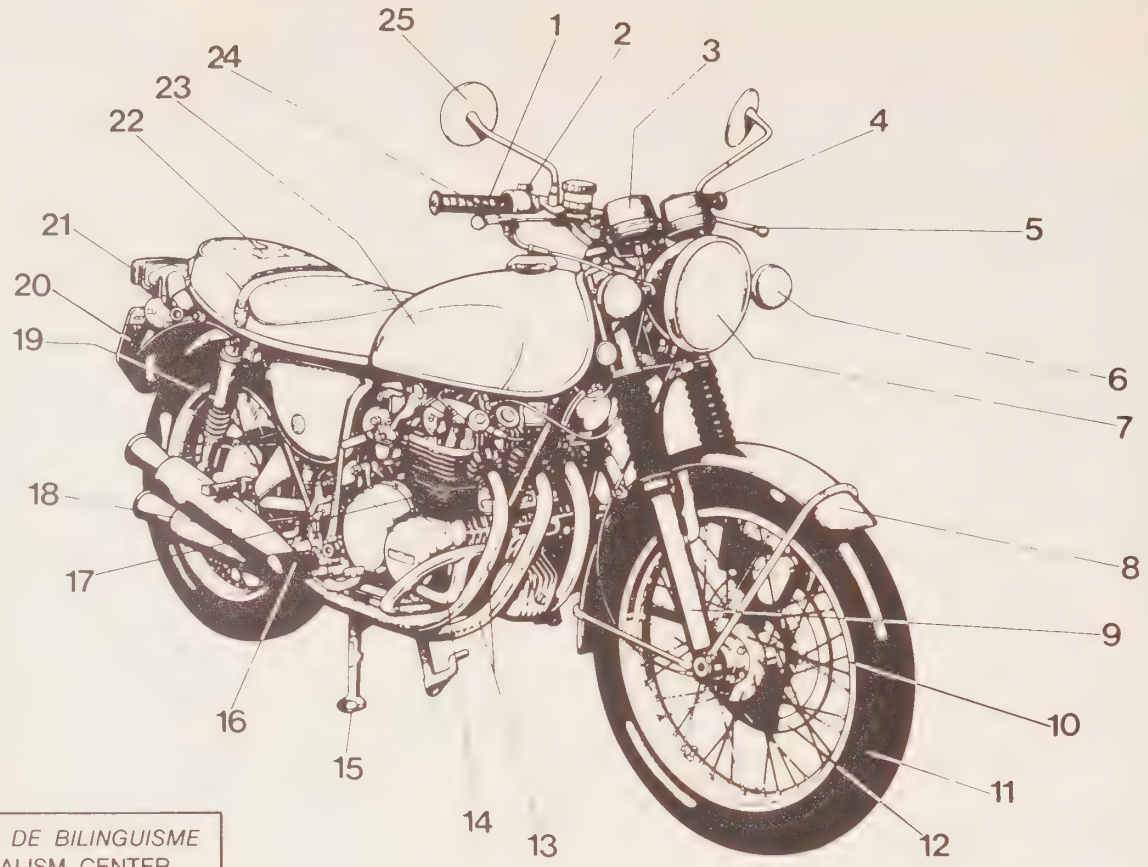
CAPTAIN GEORGE BROWN

Captain George Brown, Master of the *CCGS Sir Humphrey Gilbert*, died recently. He first served in the Royal Navy from 1940-46. During the 1950's he served in various ships as Officer and Master in the industrial sector, including the C.N.R. In 1961 he joined the Canadian Coast Guard and moved through various Officer and Master positions, both in Newfoundland and in the Maritimes. Finally, in June 1967, he was appointed Master of the *CCGS Sir Humphrey Gilbert*, and held that position until the time of his death.

Captain Brown became a very familiar figure to a great many people in the communities he served around coastal Newfoundland, as he engaged in northern resupply, search and rescue and icebreaking.

Le capitaine George Brown, commandant sur le *NGCC Sir Humphrey Gilbert* est récemment décédé. Il a tout d'abord été au service de la Marine royale de 1940 à 1946. En 1950 il a travaillé sur différents navires du secteur industriel en tant qu'officier et commandant. En 1961 il est venu à la Garde côtière. Il a occupé des postes d'officier et de commandant tant à Terre-Neuve que dans les autres provinces maritimes. En juin 1967 il a été nommé commandant du *NGCC Sir Humphrey Gilbert*, poste qu'il occupait toujours à sa mort.

Le capitaine Brown était très connu dans les localités du littoral de Terre-Neuve pour avoir souvent participé aux expéditions d'approvisionnement, de recherche et de sauvetage, ainsi qu'à la brise des glaces.



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SPEEDOMETER

5 *COMMANDE D'EMBRAYAGE*
SHIFT STICK

6 *INDICATEUR DE CHANGEMENT DE DIRECTION*
TURN SIGNAL LIGHT

7 *PHARE*
HEAD LIGHT

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FENDER

9 *FOURCHE TÉLESCOPIQUE*
TELESCOPIC FORK

10 *JANTE*
RIM

11 *PNEU*
TIRE

12 *DISQUE DE FREINAGE*
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FOOT REST

17 *MOTEUR*
MOTOR

18 *SILENCIEUX*
MUFFLER

19 *AMORTISSEURS TÉLESCOPIQUES*
TELESCOPIC SHOCK ABSORBERS

20 *PLAQUE D'IMMATRICULATION*
LICENSE PLATE

21 *FEU ARRIÈRE*
TAIL LIGHT

22 *SELLE*
SADDLE

23 *RÉSERVOIR D'ESSENCE*
GASOLINE TANK

24 *COMMANDE DE FREINAGE*
BRAKE CONTROL

25 *RÉTROVISEUR*
REAR VIEW MIRROR

wild birds of transport
oiseau sauvage des transports



The LARGE-MOUTHED WATER-JOCKEY

Unfortunately this inconsiderate species of aquatic bird is on the increase wherever people gather for a quiet relaxed afternoon at the beach. His total disregard for his own safety is regrettable, but his immature antics usually harm innocent bystanders instead. The ratio of brainpower to horsepower often varies inversely resulting in erratic flight patterns and a high nuisance factor.

His choice of victims is indiscriminate, however he delights in attacking the female water-ski bird, uttering his loud and unmistakable mating call ... YAAA-HOOO!

LE MARTIN-CRIARD

Malheureusement, cette espèce nuisible prolifère partout où les baigneurs se rassemblent pour passer un après-midi tranquille au bord de l'eau. Que le martin-criard se fiche éperdument de sa propre sécurité est regrettable, mais ce qui l'est davantage, c'est le nombre de victimes innocentes qu'il peut laisser dans son sillage.

Son instinct de conservation est inversement proportionnel à sa puissance. Ses évolutions sont imprévisibles et souvent dangereuses.

Il ne choisit pas toujours ses victimes, mais il semble fasciné par la femelle du martin-glisseur qu'il pourchasse avec frénésie en poussant son appel strident et facile à reconnaître: YAAAOOUUU!

Transport Canada

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T 15
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september/october 1975 septembre/octobre





Tower at Mirabel

Cover Photograph — This unusual view of the Mirabel tower was produced by printing a transparency as a negative with masking and texture screen overlay.

Photograph by Gordon Thomas

Tour de contrôle de Mirabel

Photo-couverture: Cette spectaculaire vue de la Tour de contrôle de Mirabel a été produite en imprimant une diapositive tout comme on le fait pour un négatif, en surimprimant un écran transparent.

Photographie par Gordon Thomas.

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CONTENTS/SOMMAIRE

MESSAGE 3

MIRABEL 4

MIRABEL 10

PROGRAM FOR CHANGE 15

PROGRAMME POUR MODIFICATIONS 18

HISTORY IS YESTERDAY'S NEWSPAPER 21

L'ACTUALITÉ D'HIER, C'EST DÉJÀ NOTRE HISTOIRE 24

GET ME TO THE TERMINAL ON TIME 27

POUR ÊTRE À L'AÉROPORT À TEMPS 29

IALA - 1975 30

TRANSCAN/MINIREPORTAGES 32

Transportation Council

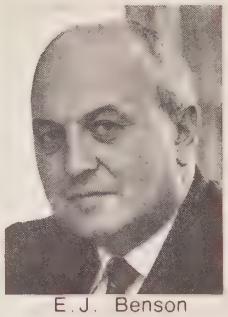
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MESSAGE

W.H. HUCK

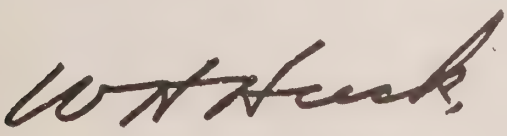
It has been said, with some truth, that the Mirabel airport was designed with the 21st Century in mind. I prefer to think that Mirabel was designed, as part of our National Air Transport Plan, to give optimum service whether the user be today's air traveller or one of the future.

There are few places in the world where construction of such an airport complex could have been considered without major dislocation. The majority of the world's civil airports was located without too much thought to expansion and its effect on the surrounding country-side, particularly that of aircraft noise in urban development areas.

Mirabel, on the other hand, combines all the conditions favourable to such a complex, not only in terms of physical space required, but also as to the ability to meet every requirement of air traffic development. At the same time, Mirabel carries with it the possibility of the orderly and imaginative development of the surrounding territory through the creation of a communications network connected to the airport and to the major centres it is designed to serve. As such it is fully expected to stimulate the industrial and commercial growth of the region.

Phase I of the long-range construction program has, therefore, not only included the most up-to-date facilities for passengers, but also specifically designed facilities for cargo handling. Future plans also include space for general aviation and an on-site STOLport.

Mirabel represents a total of nine years of planning and construction and the work of literally hundreds of specialists from government, the universities and the private sector. I do trust that users, today and in the future, will agree that we have planned and built well and that Mirabel is, indeed, in a class by itself.



Il a été dit dit à juste titre que l'aéroport de Mirabel a été conçu en fonction du 21è siècle. Je préfère pour ma part affirmer que Mirabel a été conçu, dans le cadre de notre plan national des transports aériens, en vue d'assurer le meilleur service possible tant pour les voyageurs de notre époque que pour ceux du futur.

Il y a peu d'endroits dans le monde où la construction d'un tel complexe aéroportuaire aurait pu s'effectuer sans bouleversements importants. On a choisi les emplacements de la plupart des aéroports civils dans le monde sans trop tenir compte de l'expansion future ni des effets sur le milieu environnant, et surtout ceux du bruit dans les zones urbanisées.

Au contraire, Mirabel réunit toutes les conditions favorables à l'aménagement d'un tel complexe, non seulement en termes d'espace nécessaire, mais également en fonction de la capacité de répondre à tous les besoins découlant de l'augmentation de la circulation aérienne. Parallèlement, Mirabel permettra de développer rationellement et avec imagination le territoire environnant, grâce à la mise en place d'un réseau de communications relié à l'aéroport et aux principaux centres qu'il vise à desservir. Par là, on s'attend à ce qu'il stimule la croissance économique et commerciale de la région.

La phase I du programme de construction à long terme prévoit non seulement la mise en place d'installations modernes pour les passagers, mais aussi des aménagements conçus spécialement pour la manutention des marchandises. Les plans pour l'avenir prévoient également des emplacements destinés à l'aviation en général, ainsi qu'un ADACport situé à l'intérieur des limites de l'aéroport.

Mirabel a exigé en tout neuf ans d'études et de construction, en plus du travail de centaines de spécialistes du gouvernement, des universités et du secteur privé. J'ai bon espoir que les usagers du présent comme du futur admettront que Mirabel a bien été conçu et construit et fait partie d'une classe à part.

mirabel



Aerial view of the "three clusters" on apron to Control Tower.
Vue aérienne des trois centres d'avitaillement de l'aire de stationnement et tour de contrôle.

by Judith Holland-Baillie

Canada's big new international airport, Mirabel, enters full-scale participation in the world of aviation this October with the arrival of the first 747 flight from Europe.

Set on 35,612 hectares (88,000 acres) northwest of Montreal, the largest area in the world ever devoted to commercial airport development, Mirabel has a buffer zone that will prevent the development of incompatible industries and residential areas on its doorstep.

Planning for Growth

In a way, the size of Mirabel symbolizes the geographic size of Canada and the continuing need to provide Canadians with a sophisticated transportation network — not only to link major and small population centres, but to keep Canadians in touch with the rest of the world.

The size, however, also reflects the necessity in airport planning to provide for growth through effective land use controls and allow for advances in transport technology.

Montreal is a prize example of what has happened to commercial aviation in the industrialized world over the past 30 years.

The city began its history as an aviation centre back in 1941, when it was decided that Dorval would handle a bomber transport service to England. The airport was then little more than a racetrack, with two unfinished hangars and a runway. Immediate efforts were made to put up a third hangar. After the war, other facilities were added and in 1960 a permanent terminal was built to handle the increases in what had become "commercial air traffic". The local press lauded the addition as "possibly the largest and most beautiful terminal in the world", but observed that it was located too far from downtown Montreal.

Since then, Dorval has experienced increases of more than 10 per cent a year in commercial air traffic, has accommodated the wide-bodied aircraft, dealt with complaints about noise, and has had its expansion possibilities limited by urban encroachment.

With a roster of more than two dozen airlines, the airport handled nearly 8 million passengers in 1973. Three times the 1963 total. Projections are for 12 million passengers by 1980 and more than 17 million by 1985.

To resolve these problems, the Ministry of Transport launched a major airport planning study in 1966 and, after three years of evaluating the alternatives, opted for a new airport — an airport that by size alone could respond to the increased demands of the air transport industry and the travelling public.

The Strategy

Within months of the Mirabel announcement, a task force of specialists, called the New Montreal International Airport Project Office (BANAIM), was set up in Montreal. Headed by Benoit Baribeau, former Chief Engineer of the Manicouagan and Outardes River projects for Hyrdo-Quebec, the group was assigned to develop the airport master plan, coordinate the design and construction of the first phase and to provide a land use strategy for 28,732-hectare (71,000-acre) peripheral area.

At the time BANAIM was created, a consortium of architectural and engineering consultants, International Airport Consultants of Montreal Limited, also was retained to handle the detailed design work and field construction supervision of the first phase.

By early 1970, design work had begun, the site had been cleared and tenders had been let for the construction of the first two runways. By August, 1972, work was well enough advanced to begin construction of the passenger terminal and, in 1973, work on the impressive 65.5-metre (215-foot) control tower was started.

Passenger's Airport

Mirabel has been planned with the passenger in mind and, despite its distance from the city (54.7 km or 34 miles), every effort has been made to make life easier for the air traveller.

Initially, from 1975 to the early 1980's, Mirabel will serve the international traffic sector or passengers to and from Montreal and points outside Canada and the United States. In other words, if you're booked on a flight after October 26 between Montreal and any point in Europe, Mexico, the Caribbean, Asia or the Middle East, you'll be served out of Mirabel.

To minimize surface transfers between

Mirabel and Dorval, the service also will include the domestic and transborder "legs" of international flights (for example, the Air Canada Paris-Montreal-Toronto run or the Air France Paris-Montreal-Chicago run), as well as a short-haul service for passengers connecting to or from Ottawa.

To better understand this traffic, the Project Office studied the habits and travelling characteristics of more than 20,000 international passengers — the resulting innovations speak for themselves.

What passengers will see on arrival is a natural and rugged landscape: boulders upheaved during the excavation remain in loose assembly along the main access road and, where possible, existing grasses, shrubbery and trees have been preserved. The only formal landscaping has been confined to the passenger terminal and commercial and administration area, where tree-lined boulevards and walkways have been included in the overall design.

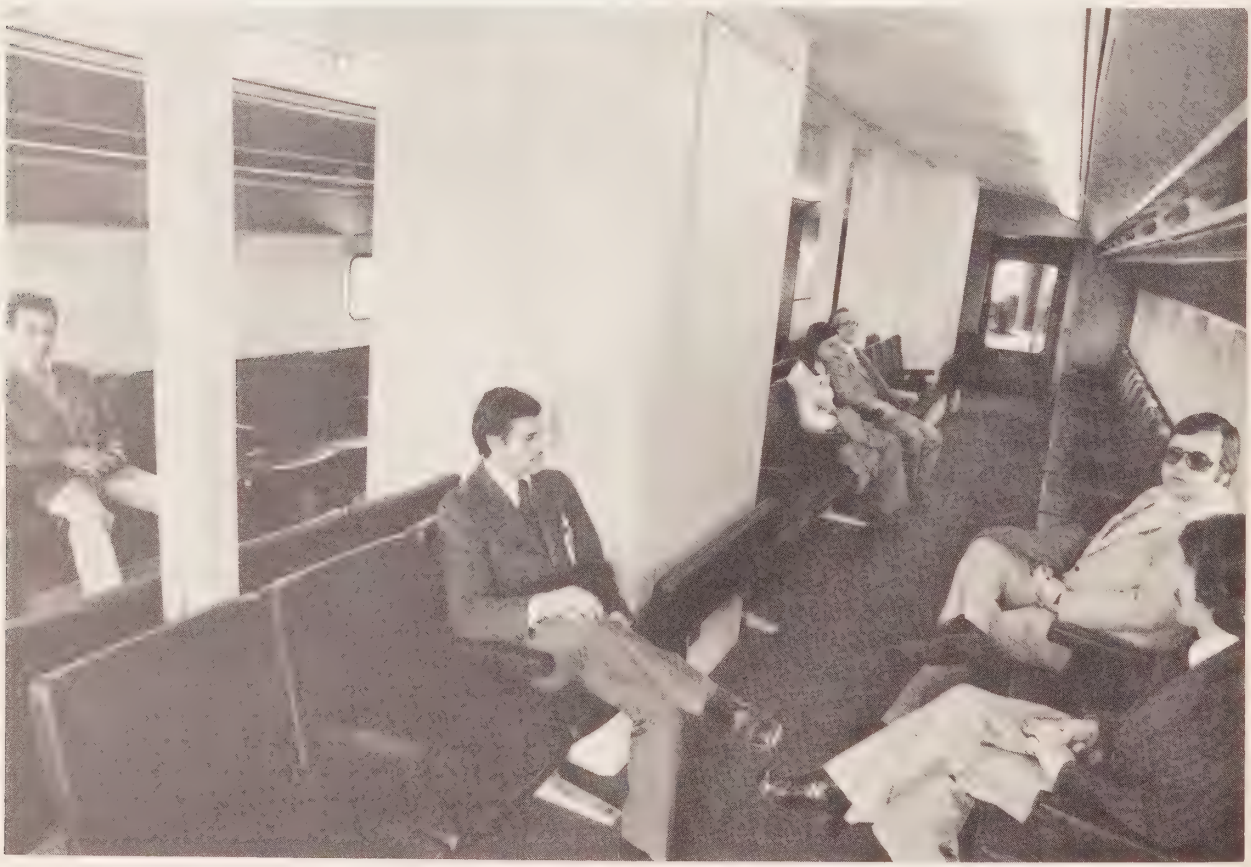
The terminal building itself is a low, sleek, unilevel processing facility, with enplaning operations at the western end and deplaning operations at the eastern end of the same level. The processing of both the departing and arriving air passenger has been radically simplified.

Passengers who arrive by bus or taxi will be dropped off at the main processing curb, entering the departure lobby directly. Passengers who arrive by private vehicle will park in the attached three-level carpark and enter by moving ramps from the lower parking curbs. At both the processing curb and lower parking curbs, signs will indicate the precise interior location of each airline — to minimize and, hopefully, eliminate unnecessary cross-flow traffic.

Inside the building, the airline information and reservation desks face the lobby entrances, with the ticket check and baggage drop counters adjacent and at right angles. If already ticketed, passengers will proceed to the latter point, check their luggage, select their seat and obtain their boarding pass. Then they'll proceed, straight ahead, to the security check-point, the outbound area and the waiting passenger transfer vehicle (PTV), which will transfer them to the aircraft.

For direct passenger processing, then, there will be no change in level, no major change in direction and a maximum walking distance of 130 paces, which is considerably less than prescribed in international standards.

Arriving passengers will have the same step-saving conveniences. Once the aircraft



The interior of the PTV.
L'intérieur du car transbordeur.

arrives, passengers will board the PTV for transfer to the deplaning section of the terminal building. There, they will disembark into a circulating and queuing area and follow a linear procedure through inspection lines, customs clearance and luggage pick-up, to the deplaning lobby and terminal exits. The sequence has been designed to process the passenger (from aircraft wheelstop to terminal exits) in 30 minutes.

For the passenger with time to spare, a variety of public and commercial services will be offered. Choice of the various concessions followed a careful analysis of the financial terms applied at other Canadian airports and a review of the design, layout and operation of commercial sections at airports in Canada, the United States and Europe.

In the terminal building, standard services will include news stands, coin operated lockers, telegraph and foreign exchange — all within easy reach of the main processing level. In the outbound area, there also will be an extensive duty free facility with "cash and carry" goods, fast food and beverage services and other "demand" requirements for the departing passenger.

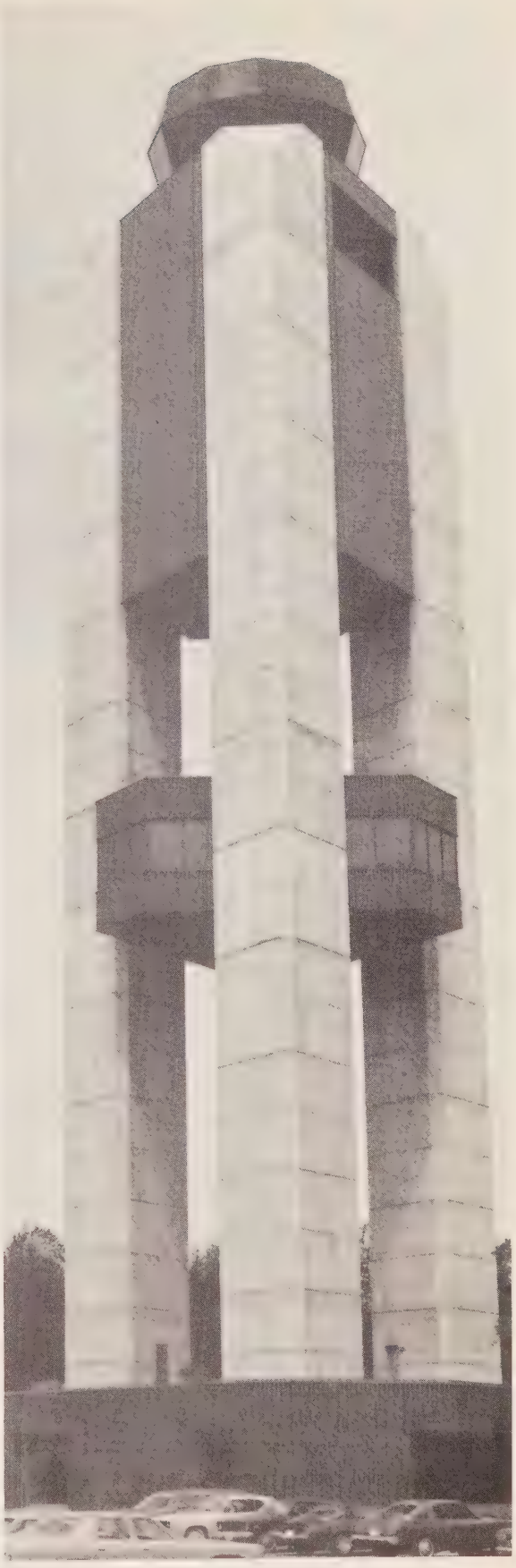
The main concessions — the principal food and beverage outlets and stores with books, toys, gifts and Canadian handicrafts — will be located on the mezzanine.

Across the way, on the north side of the terminal carpark, there will be a 335-room luxury hotel. A focal point of the six-storey structure will be the solarium area featuring a swimming pool, wading pool, whirlpool and saunas surrounded by tropical trees and greenery. The hotel has been designed so that many of the guest rooms overlook the solarium, to provide a "summer year-round" atmosphere. The hotel will be completed during the summer of 1976 and will be connected to the terminal by an elevated pedestrian walkway.

Designed for up to 10 million passengers and about 540,000 tonnes (600,000 tons) of cargo a year, Phase One also includes two cargo terminals, a fire, crash, and rescue station, an MOT service centre, airline catering buildings, a centralized de-icing pad, a seven-storey administration building where the MOT Central Operations Control Centre will be located, an aircraft apron with 18 "remote" gates and four "nose-in" parking positions, two 3,657-metre (12,000-foot) runways, a control tower and about 16 km (10 miles) of service and public access roads.

But How About Getting There?

Mirabel's first users will be served by more than a half a dozen highways and autoroutes and a fully integrated public transpor-





Benoit Baribeau, head of the New Montreal International Airport Project Office (BANAIM).
Benoit Baribeau, chef de Bureau d'aménagement du nouvel aéroport international de Montréal (BANAIM).

tation system.

Through extensive construction programs, a regional network has begun to take shape which will include three north/south and three east/west autoroute corridors. Four of the autoroutes have either been extensively improved and are now accessible or are scheduled for completion by the airport opening or early next year.

Initially, public transportation will consist of a fleet of more than 40 highway buses, with air-conditioning, FM music and lots of luggage space. Owned and operated by the transit commissions of the Montreal Urban Community and the City of Laval, the fare for regular or express service (from both Montreal and Dorval) will range from $2.50 to $3.50 per person. A type of "dial-a-bus" limousine service also is under consideration.

In future phases, major extensions will be made to the existing road network; there will also be a rapid transit system from city centre to facilitate access for the downtown user.

The Future

Even as the opening of Mirabel brings Phase One into full operation, planners are looking ahead to the 1980's, stressing more than ever that Mirabel is an airport for the future. In this regard, flexibility is the key: long-term planning flexibility which will allow Mirabel to adapt to changing travel patterns and new developments in the transportation industry.

Already, planners are assessing the requirements of Phase Two of the Master Plan, to determine by what date new installations will be required to handle a second transfer of air traffic.

The Master Plan itself calls for a total of six runways and six terminal buildings — comparable in size to the new Dallas/Fort Worth Airport, which opened in September 1973 and the new Charles de Gaulle Airport, which opened in March 1974.

Although the size of Mirabel would be enough to have it classed as a superport of the modern jet age, the success of the development lies in the long-range planning of the federal and Quebec governments to ensure the prolonged advancement of a healthy air transport industry.

The 28,700-hectare (71,000-acre) peripheral area will provide millions of people with modern and environmentally sensitive air transport facilities.

In the years ahead, the surrounding area will support an integrated mixture of farms, recreational and forest reserves, industrial locations, controlled housing programs and wilderness areas — all of which will be compatible with the new airport and will ensure the future of Montreal as one of Canada's largest and busiest aviation centres.

mirabel



View at 215 feet (65.5 metres) Control Tower, the tallest one in Canada.
Vue de la tour de contrôle de 215 pieds (65.5 mètres), la plus haute au Canada.

par Judith Holland-Baillie

Mirabel, l'important et le dernier né des aéroports internationaux du Canada entrera en pleine activité aéronautique en octobre prochain, avec l'arrivée du premier vol sur 747 en provenance d'Europe.

Couvrant une superficie de 35,612 hectares (88,000 acres) au nord-ouest de Montréal, ce qui représente la plus vaste superficie jamais consacrée dans le monde à l'aménagement d'un aéroport commercial, Mirabel est ceinturé d'une zone tampon qui empêchera l'installation, dans sa périphérie, d'industries ou de quartiers résidentiels allant à l'encontre de sa vocation.

Plan de croissance

D'une certaine manière, les dimensions de Mirabel reflètent les dimensions géographiques du Canada ainsi que le besoin constant de doter les Canadiens d'un réseau de transport de pointe, non seulement pour relier les grandes agglomérations aux petits centres, mais aussi pour que les Canadiens restent en contact avec le reste du monde.

Toutefois, ces dimensions découlent également de la nécessité d'une planification aéroportuaire, afin d'en permettre l'expansion, grâce à un contrôle efficace de l'utilisation du sol, et de favoriser les progrès dans la technologie des transports. Le cas de Montréal illustre bien l'évolution de l'aviation commerciale survenue dans le monde industrialisé au cours des derniers trente ans.

Les débuts de cette ville en tant que centre aéronautique remontent à 1941, date à laquelle Dorval fut choisie pour être le siège d'un service de bombardiers vers l'Angleterre. L'aéroport n'était guère à l'époque plus qu'une piste de course, disposant d'une piste et de deux hangars inachevés. On entreprit bientôt la construction d'un troisième hangar. Après la guerre, d'autres installations furent ajoutées et en 1960, on construisit une aérogare permanente pour faire face à l'augmentation de ce qui s'appelait dès lors la "circulation aérienne commerciale". La presse locale accueillit chaleureusement ce nouvel apport qu'elle qualifia de "peut-être la plus grande et la plus belle aérogare du monde", mais fit remarquer qu'elle était située trop loin du centre-ville.

Depuis lors, Dorval s'est vu confronté à des augmentations annuelles de la circulation aérienne commerciale de plus de 10%, a dû recevoir des avions de plus en plus gros, a fait l'objet de plaintes à cause du bruit, et a vu ses possibilités d'expansion limitées par l'invasion urbaine.

En 1973, près de huit millions de passagers, soit le triple du total de 1963, ont transité par l'aéroport où siègent plus de deux douzaines de lignes aériennes. On prévoit que ces chiffres s'élèveront à 12 millions de passagers vers 1980, et à plus de 17 millions vers 1985.

Afin de remédier à ces problèmes, le ministère des Transports a entrepris dès 1966, une importante étude de planification. Après avoir analysé pendant trois ans les diverses possibilités, les spécialistes ont recommandé la création d'un nouvel aéroport, dont les dimensions à elles seules suffiraient à répondre aux demandes accrues de l'industrie du transport aérien et du public voyageur.

Le plan directeur

A quelques mois de l'annonce du projet de Mirabel, un groupe de travail fut institué à Montréal sous l'appellation de Bureau d'aménagement du nouvel aéroport international de Montréal (BANAIM). On confia à ce groupe dirigé par M. Benoit Baribeau, qui avait auparavant été ingénieur en chef pour les projets hydro-électriques des rivières aux Outardes et Manicouagan, la tâche de mettre au point le plan directeur de l'aéroport, de coordonner la conception et la construction de la première phase des travaux et de prévoir une politique d'utilisation du sol pour les 28,732 hectares (71,000 acres) de la zone périphérique.

Au moment de l'institution du BANAIM, on engagea les services d'une firme regroupant des ingénieurs et des architectes, les consultants du nouvel aéroport international de Montréal limitée, afin de s'occuper de l'ouvrage de conception détaillée et de superviser les travaux sur le chantier durant la première phase.

Au début de 1970, on avait commencé l'ouvrage de conception, le site avait été

déblayé et des appels d'offres avaient été faits pour la construction des deux premières pistes. En août 1972, les travaux allaient bon train de sorte qu'on put entreprendre la construction de l'aérogare et en 1973 démarrèrent les travaux d'érection de l'impressionnante tour de contrôle d'une hauteur de 65,5 mètres (215 pieds).

Un aéroport destiné aux passagers

Mirabel a été planifié en fonction du passager, et malgré la distance qui le sépare de la ville (57,7 km ou 34 milles), on a fait tout ce qui était nécessaire pour faciliter la vie du voyageur aérien.

Pendant la période initiale, de 1975 jusqu'au début des années 1980, Mirabel desservira la circulation internationale des passagers en partance ou à destination de Montréal vers les centres situés à l'extérieur du Canada et des Etats-Unis. Autrement dit, si après le 26 octobre vous vous envolez de Montréal vers un point quelque part en Europe, au Mexique, aux Antilles, en Asie ou au Moyen-Orient, vous transiterez à Mirabel.

Afin de réduire les déplacements au sol entre Mirabel et Dorval, le service comprendra également des "extensions" intérieures et extérieures pour les vols internationaux (par exemple, le trajet d'Air Canada Paris-Montréal-Toronto ou le trajet d'Air France Paris-Montréal-Chicago), de même qu'un service sur courte distance pour les passagers en provenance ou à destination d'Ottawa.

Afin de mieux comprendre les besoins de la circulation aérienne, le Bureau d'aménagement a mené une étude auprès de plus de 20,000 passagers internationaux sur leurs caractéristiques et leurs habitudes de voyage; les innovations qui en découlent parlent d'elles-mêmes.

En arrivant, les passagers découvriront un paysage accidenté laissé à l'état naturel: de gros rochers extraits durant les travaux d'excavation gisent épars le long des principales voies d'accès et là où c'était possible, on a conservé les plantes, les bosquets et les arbres. Les seuls aménagements paysagers de type habituels se retrouvent dans le secteur de l'aérogare et de bâtiments commerciaux et administratifs, où la conception globale a prévu le tracé de boulevards et de promenades bordés d'arbres.

L'aérogare consiste en une installation de service, basse, plane, à un seul étage sur lequel s'effectue l'embarquement à l'extrémité Ouest et le débarquement à l'extrémité Est. Les formalités de départ et d'arrivée des passagers ont été radicalement simplifiées.

Les passagers qui arrivent par autobus ou par taxi descendront directement devant le hall des départs. Ceux qui se rendent en voiture particulière stationneront dans le parc des voitures attenant de trois étages et pénétreront dans l'aérogare au moyen de rampes mobiles depuis les paliers inférieurs de stationnement. Sur le palier d'accès principal et sur les paliers inférieurs de stationnement, des panneaux indiqueront l'emplacement précis de chacune des compagnies aériennes réduisant, voire même éliminant ainsi une circulation désordonnée.

A l'intérieur de l'édifice, les comptoirs de renseignements et de réservations des compagnies aériennes font face au hall d'entrée; les bureaux de vente des billets et les comptoirs à bagages sont adjacents à angle droit. Les passagers qui ont déjà leur billet se rendront au dernier point de contrôle, feront vérifier leurs bagages, choisiront leurs places et se procureront un laisser-passer d'embarquement. Ils passeront ensuite, tout droit, au point de contrôle de la sécurité, à la zone d'embarquement et monteront à bord d'un véhicule de transport intermédiaire qui les transbordera dans l'aéronef.

Afin d'assurer un acheminement direct des passagers, il n'y aura aucun changement de niveaux ni de changement de direction et la distance maximale équivaudra à 130 pas, ce qui représente une distance de beaucoup inférieure à celle prescrite par les normes internationales.

Les arrivants profiteront des mêmes commodités. A l'arrivée de l'aéronef, les passagers embarqueront à bord du véhicule de transport intermédiaire qui les mènera à la section de débarquement de l'aérogare. De là ils débarqueront dans une zone de circulation et une salle d'attente et suivront la suite des formalités, vérification, dédouanement et prise des bagages pour se rendre au hall de débarquement et aux sorties de l'aérogare. La série d'installations nécessaires a été conçue dans le but d'effectuer tout l'acheminement des passagers (depuis l'immobilisation de l'appareil jusqu'aux sorties de l'aérogare) en 30 minutes.

Tout un éventail de services publics et commerciaux sera offert aux passagers peu pressés. Le choix des diverses concessions répond à une analyse soigneuse des conditions financières appliquées aux autres aéroports canadiens et à une étude de la conception, de la disposition et de l'exploitation des sections commerciales aux aéroports canadiens, américains et européens.

Dans l'aérogare, les services courants comprendront des kiosques, des casiers automatiques, des téléphones et des bureaux de change, tous facilement accessibles sur le



The Passenger Transfer Vehicle in position. The telescoping gangway is extended to form an air-tight seal with the aircraft.
Le véhicule transbordeur en position élevée. La passerelle télescopique forme avec la paroi de l'avion un joint étanche.

palier d'accès principal. En outre, la zone d'embarquement renfermera une vaste installation d'articles hors taxes vendus au comptant, des services rapides de restauration et de rafraîchissement et d'autres services essentiels offerts aux passagers en partance.

Les principales concessions, les distributeurs principaux de restauration et de rafraîchissement, les librairies, les magasins de jouets et de cadeaux et les boutiques d'artisanat canadien seront situés à la mezzanine.

En face, du côté Nord du parc des voitures des aérogares, sera érigé un hôtel de luxe comptant 335 chambres. Un des points d'attraction de cet édifice de 6 étages sera le solarium comprenant une piscine, une pataugeuse, un bain tourbillon et des saunas entouré d'arbres tropicaux et de verdure. L'hôtel a été construit de telle façon que les chambres dominent le solarium, créant ainsi une ambiance d'été continu. L'hôtel sera terminé au cours de l'été de 1976 et sera relié à l'aérogare au moyen d'une passerelle aérienne pour les piétons.

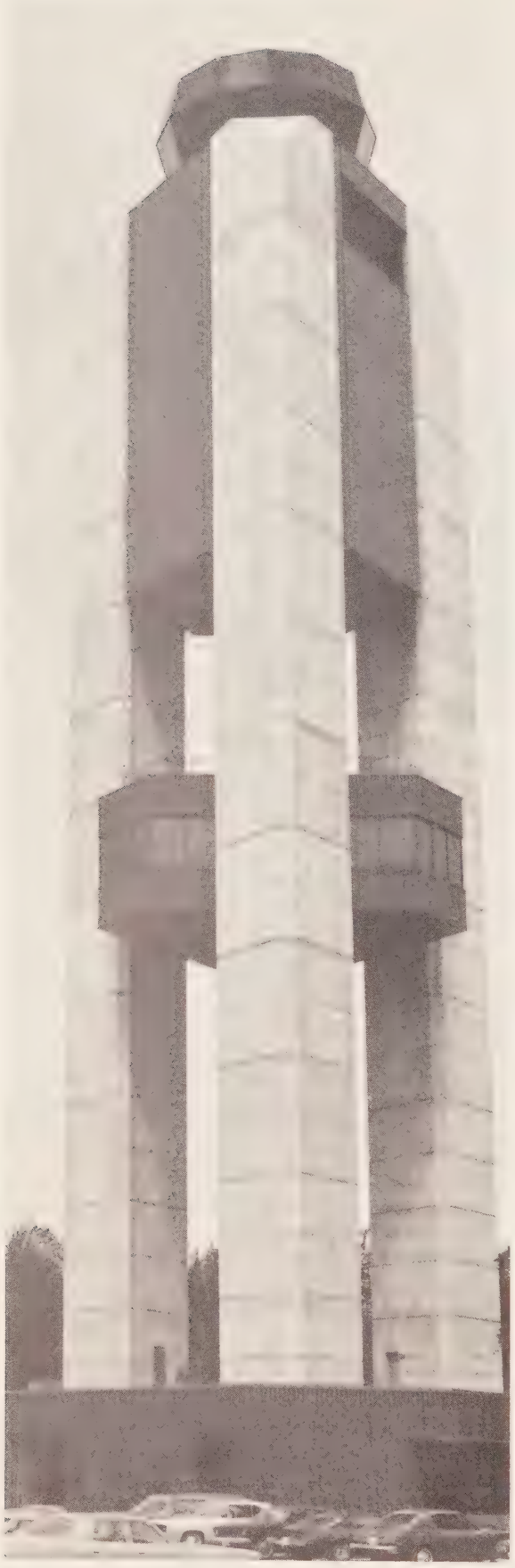
D'une capacité de plus 10 millions de passagers et d'environ 540,000 tonnes (600,-000 tonnes anglaises) de marchandises par année, la phase un comprend également deux aérogares à marchandises, un poste d'incendie, et un poste de secours, un centre de services du MdT, des édifices renfermant les services d'hôtellerie des compagnies aériennes, une aire centralisée de dégivrage, un édifice d'administration de sept étages logeant le centre de contrôle des opérations centrales du MdT, une aire de trafic pour les aéronefs, comptant 18 portes "distantes" et 4 postes de stationnement extérieurs, 2 pistes de 3,657 mètres (12,000 pieds), une tour de contrôle et environ 16 kilomètres (10 milles) de routes de services et de routes d'accès publiques.

Mais comment s'y rendre?

Les premiers usagers de Mirabel pourront profiter de plus d'une demi-douzaine de routes et d'autoroutes et d'un système de transport en commun totalement intégré.

Dans le cadre de vastes programmes de construction, un réseau régional, formé de trois corridors d'autoroute Nord-Sud et de trois autres en direction Est-Ouest vient d'être mis en place. Quatre de ces autoroutes ont subi d'importantes rénovations et sont maintenant accessibles ou du moins seront achevées pour l'inauguration de l'aéroport.

Au début, le transport en commun comprendra un groupe de 40 autobus desservant



les autoroutes et munis d'un système à air conditionné, d'un poste de radio de fréquence FM et d'espaces à bagages. Possédé et exploité par les commissions de transport de la communauté urbaine de Montréal et de Ville de Laval, le service régulier ou le service express (depuis Montréal et Dorval) aura un tarif échelonné entre $2.50 et $3.50 par personne. Un mode de service de limousine à la demande est également à l'étude.

Dans les prochaines phases, le réseau routier actuel subira des prolongations importantes; en outre, un système de transport rapide à partir du centre ville facilitera l'accès des citadins.

L'avenir

Bien que l'ouverture de Mirabel marquera l'achèvement de la phase un, les planificateurs visent déjà les années 1980, attachant de l'importance au fait que Mirabel est un aéroport de l'avenir. A cet égard, la clé se trouve dans la souplesse: une planification à long terme qui permettra à Mirabel de s'adapter aux changements dans les modes de transport et aux progrès réalisés dans l'industrie des transports.

D'ores et déjà, les planificateurs évaluent les besoins de la phase deux du plan directeur afin de déterminer le moment où les nouvelles installations seront nécessaires pour répondre à un autre transfert de la circulation aérienne.

Le plan directeur en soi prévoit un total de 6 pistes et de 6 aérogares, comparables, au point de vue de la dimension, au nouvel aéroport Dallas/Fort Worth qui a été inauguré en septembre 1973 et au nouvel aéroport Charles de Gaulle, entré en service en mars 1974.

Bien que la dimension de Mirabel suffise à la classer au rang de super aéroport de l'âge des jet modernes, sa réussite repose sur la planification à long terme du gouvernement fédéral et du gouvernement du Québec pour assurer le développement continu d'une industrie du transport aérien florissante.

La périphérie de 28,700 hectares (71,000 acres) offrira à des milliers de personnes des installations de transport aérien à la fois modernes et ajustés aux besoins de l'environnement.

Dans les années à venir, la zone périphérique intégrera des fermes, des espaces récréatifs et des réserves de forêts, d'industries, des complexes d'habitations contrôlées et des espaces sauvages qui seront compatibles avec le nouvel aéroport et contribueront à faire de Montréal le centre d'aviation le plus grand et le plus achalandé du Canada.

Program for Change

by Bill Dunstan

At least two things are constant in Canadian transportation: its importance to our living standards, national unity and recreation, and its need to change with the times.

Last summer, the Minister tabled in the House of Commons a pattern for change. New federal transportation policy proposals designed to cope with immediate difficulties and to launch an orderly assault on long-term anticipated transportation problems.

Produced by a group of transportation task force experts, the proposals call for a change in the current policy which is based mainly on competition. In looking at Canada's size and distribution of population, it is clear that transportation cannot be competitive in all parts of the country, particularly in the thinly-populated, remote regions.

The documents recently tabled in the House of Commons were "Transportation Policy — A Framework for Transportation in Canada"; "An Interim Report on Inter-city Passenger Movement in Canada", and "An Interim Report on Freight Transportation in Canada". Each report is "interim"; the studies continue.

The group points out that dramatic changes have occurred in the eight years since the National Transportation Act came into force.

Demand and prices have increased for Canada's natural resources including oil, grain, potash and coal. This has brought increasing pressure on the capacity of the transportation system.

An energy crisis has sharpened awareness of the need to conserve non-renewable resources.

Social values and attitudes have changed. Canadians are increasingly concerned about the impact of economic growth on the quality of life and the environment in both urban and rural areas. Some even challenge the desirability of any growth.

There is an increased awareness of regional disparities and of urban and rural population problems and needs.

Transportation technology has made significant advances recently. These include increasing use of containers, very large cargo carriers and unit trains.

Pressing Problems

A number of major problems and opportunities demand immediate or early consideration.

For example, world prices are making Canada's resources in the far north — including gas, oil and iron ore — increasingly attractive prospects for exploitation; consequently there is a demand for extensions of the existing transportation systems into the northern parts of Canada which, if the unique environmental and social problems can be overcome, will open up access to these resources.

There is a need for increased capacity to the West Coast to relieve current and projected congestion in the main transportation links and terminals, especially at Vancouver.

Adequate capacity in the transportation system in East-Central Canada must also be ensured so that the increasing flow of Canadian produce such as grain, iron ore and coal can be efficiently and economically accommodated.

Modernization of the grain handling system is overdue.

There is also an obvious need for an integrated, efficient intermodal passenger network to serve Canadians in all parts of the country.

Policy and Principles

The three major objectives of the policy are to give all parts of Canada accessibility and equal treatment in terms of transportation, make the federal government responsible for providing a total system for this

purpose, and integrate services so that the most appropriate mode will be used in each situation.

These objectives are based on a number of principles.

- Non-transportation as well as transportation alternatives should be considered in developing transportation services. For example, it might be better to transform fuel resources into electrical energy on the site, rather than shipping the raw materials elsewhere.
- While intermodal competition is not as strongly emphasized as in the existing legislation, intermodal and intramodal competition should be encouraged where economic and technical characteristics permit.
- There should be regional and national carriers, under both public and private ownership. Privately-owned carriers should be Canadian controlled. If there is any conflict between public and private objectives, the public interest must prevail and the interests of total national service must be overriding.
- Operation of transportation and the provision of facilities and services for direct support of transportation should be self-supporting to the greatest extent possible, and plans should include cost recovery.
- Where a financially unviable transportation service is considered necessary, the federal government should assume the cost.
- Transportation rates should be governed by competition, where it exists; where there is no competition, prices should be regulated to protect the users. Where there are competitive services but public assistance is considered necessary to support a national, social or economic development purpose, the assistance should not be allowed to distort the selection of the most appropriate mode.
- Special measures should be adopted to ensure that essential transportation services are maintained.
- The regulatory agency concerned should be responsible for overseeing the adherence to national policies, standards of service, rules and guidelines under which the various constituent parts of the transportation system operate.
- There should be provision for consultation and participation among different levels of government and with the public on major aspects of development and economic regulation.

What's the Difference?

The proposed policy sees transportation as an instrument for promoting national policies rather than simply as a passive support service.

The old policy has focused almost exclusively on well established, competitive services. According to the new policy, the Government will take the lead in developing new transportation technology, and insuring good service for hard-to-reach, thinly populated areas. There will be minimum government involvement in existing, high-level services.

Whereas the old policy concentrated on freight transportation, the new one gives equal prominence to passenger transportation.

Main Points

The new policy, recognizing transportation's overall importance to Canada's economic, social and political health, charges Government with developing a national system.

Transportation in Canada amounts to a range of services with various degrees of maturity and competition. Government will be more involved with the development of extended, expanded or improved services than with already mature and effective services.

It is recognized that well-developed parts of the transportation system can be self-sustained financially; must be, in fact, if the Government is to have the resources to develop the system further.

Initiatives

The Government intends to move toward a passenger service that makes the best use of air, bus and rail modes of public and private carriers. The idea is to provide better services that will eventually be financially self-sustaining, except in remote areas.

Canadian National and Canadian Pacific, for example, are being asked to improve service at minimum cost by pooling their operations where practicable.

Approval in principle has been granted for a demonstration project featuring high-speed runs and frequent service by light, modern, ultra-comfortable rail equipment in selected portions of the Québec-Windsor corridor.

Also proposed is an equitable freight rate system. Under the current system it is cheaper to ship steel from Hamilton to Vancouver than from Hamilton to Edmonton. Action will

be taken toward eliminating such anomalies.

The Federal Government will take a much more aggressive role in providing transportation services to remote communities which do not have year-round access by highway or water.

Nothing is as yet "cast in concrete"; the group continues its work and the Parliamentary Committee on Transportation and Communication already has begun to study the interim proposals. The full extent of the changes in our transportation system are yet to be determined, but things will never be the same again.



Jim Davey

It was with deep regret that, at the time this issue was being prepared for the printer, we learned of the tragic death of Jim Davey, Senior Assistant Deputy Minister (Special Projects).

Mr. Davey, who came to Canada from his native Britain 21 years ago, entered the Public Service in 1968 after a career in the private sector which included that of senior researcher for the Canadian National Railways and vice-president of a management consultant firm in Montreal. He was seconded to become special advisor to Transport Minister Jean Marchand in February 1973 and appointed Senior Assistant Deputy Minister (Special Projects) in October 1974.

Mr. Davey was an adviser to Mr. Marchand during the keystone Western Economic Opportunity Conference in July 1973. The conference was the first step towards the Transportation Policy Review, the extensive study which Mr. Davey headed.

We wish to convey our sincerest sympathy to Patricia Davey, their son and six daughters.

programme de modifications

par Bill Dunstan

Il y a au moins deux principes de base dans le domaine des transports au Canada: son importance pour notre niveau de vie, nos loisirs et l'unité nationale, et la nécessité d'évoluer avec le temps.

L'été dernier, le Ministre a déposé à la chambre des Communes un plan de transformation: un projet d'une nouvelle politique fédérale des transports visant à résoudre les difficultés présentes et à dresser un plan d'attaque pour les problèmes à long terme.

Le projet conçu par un groupe d'experts des Transports, préconise une transformation de la politique actuelle qui se fonde surtout sur la concurrence. Il suffit de jeter un coup d'oeil sur les dimensions du Canada et la répartition de la population pour constater que le transport ne peut soutenir la concurrence partout au pays, surtout dans les régions éloignées où la population est clairsemée.

Les documents déposés récemment à la Chambre des communes s'intitulent "Politique des transports: un cadre d'ensemble pour les transports au Canada"; "Rapport provisoire sur le transport interurbain des passagers au Canada"; et "Rapport provisoire sur le transport de marchandises au Canada". Tous ces rapports sont provisoires, car les études se poursuivent.

Le groupe de travail a souligné les changements radicaux survenus au cours des huit années depuis l'entrée en vigueur de la Loi nationale sur les Transports.

La demande et les prix des ressources naturelles canadiennes se sont accrus, notamment ceux des hydrocarbures, des céréales, de la potasse et du charbon. Cette situation exerce des pressions de plus en plus fortes sur la capacité de nos moyens de transport.

La crise énergétique nous a fait prendre conscience de la nécessité d'économiser les ressources non-renouvelables.

Les comportements et les valeurs sociales se sont modifiés. Les Canadiens se préoccupent de plus en plus des répercussions que la croissance économique pourrait avoir sur la qualité de la vie et le milieu naturel, dans les villes aussi bien qu'à la campagne. Certains critiques remettent en cause même le bien-fondé de la croissance.

Les gens se rendent maintenant compte des disparités régionales et des problèmes que suscitent les schémas de répartition de la population en milieu urbain et rural.

La technologie des transports a progressé de façon remarquable depuis quelques années. On peut mentionner l'utilisation accrue des conteneurs, des transporteurs géants et des trains-blocs.

Problèmes urgents

Un certain nombre de possibilités et de problèmes exigent une attention immédiate ou dans les plus brefs délais.

Par exemple, les prix sur les marchés mondiaux font que les ressources du grand Nord canadien, entre autres le gaz, les hydrocarbures et le minerai de fer, deviennent de plus en plus intéressantes à exploiter. Par conséquent, on assiste à une demande pour que le système des transports s'étende aux régions nordiques du pays, ce qui, si on arrive à surmonter les problèmes écologiques et sociaux délicats que cela pose, permettrait l'accès à ces ressources.

Il importe d'accroître la capacité des transports vers la côte Ouest afin d'éliminer les encombrements actuels et futurs sur les principales voies de communications et aux gares, principalement à Vancouver.

Il faudrait faire en sorte que le système des transports du centre-Est du Canada ait une capacité suffisante pour acheminer les expéditions croissantes de produits canadiens tels que les céréales, le minerai de fer et le charbon, ce qui peut être fait de façon efficace et économique.

Il est plus que temps de moderniser les installations de manutention du grain.

Il importe également de créer un réseau de transport des passagers, intégré et efficace, pouvant desservir la population de toutes les régions du pays.

Politique et principes

Les trois grands objectifs de la politique des transports sont de rendre accessibles toutes les régions du Canada et de les faire bénéficier également des services de transport, de confier au gouvernement fédéral la responsabilité de mettre sur pied un système global à cette fin, et d'intégrer les services afin d'utiliser le mode le mieux approprié à chaque situation.

Ces objectifs reposent sur un certain nombre de principes :

- La rentabilité d'un système de transport doit être établie; par exemple, serait-t-il plus avantageux de transformer sur place le combustible en énergie électrique plutôt que d'expédier ailleurs les matières premières.
- Bien qu'on ne mette plus autant l'accent sur la concurrence entre les modes de transport que ne le fait la loi actuelle, la concurrence intermodale et intramodale devrait être favorisée là où les conditions économiques et techniques s'y prêtent.
- Il doit exister des transporteurs nationaux et régionaux, à la fois publics et privés. Les compagnies privées devraient être contrôlées par des intérêts canadiens. S'il surgit un conflit entre les objectifs publics et ceux du secteur privé, l'intérêt public doit prévaloir et les intérêts de l'ensemble du service national doivent primer.
- L'exploitation des transports et la fourniture des installations et des services complémentaires doivent tendre à l'autofinancement dans la mesure du possible, et les plans doivent prévoir la récupération des coûts.
- Lorsqu'un service de transport indispensable n'est pas financièrement viable, le gouvernement fédéral devrait en supporter le coût.
- Les tarifs des transports devraient être régis par les lois de la concurrence là où elle s'exerce; dans le cas contraire, il faut réglementer les prix afin de protéger les usagers. Là où plusieurs services se font concurrence et si une aide de l'État est jugée nécessaire pour appuyer un objectif national de progrès social ou économique, il faut pas que cette aide vienne fausser le choix du mode le mieux adapté.
- Il faut adopter des mesures spéciales afin que les services de transport essentiels soient maintenus.
- L'organisme investi de pouvoirs de réglementation doit veiller à ce que les divers éléments du système des transports fonctionnent en accord avec la politique nationale, les normes de service, les règles et les lignes directrices qui les gouvernent.
- On doit prévoir des moyens permettant au public et aux divers paliers de gouvernement d'exprimer leur point de vue et de jouer un rôle actif lorsque des points importants de mise sur pied et de règlementation économique de services sont en cause.

Quoi de neuf?

La politique proposée envisage les transports comme un moyen de promouvoir les objectifs nationaux au lieu d'un simple service de soutien passif.

L'ancienne politique négligeait les services qui n'étaient pas déjà bien établis et concurrentiels. Dans le cadre de la nouvelle politique, le gouvernement jouera le rôle de chef de file dans la mise au point d'une nouvelle technologie des transports et la mise sur pied de services adéquats dans les régions difficilement accessibles et peu peuplées. Le gouvernement n'interviendra que très peu dans les services déjà bien implantés.

Alors que l'ancienne politique était centrée sur le transport des marchandises, la nouvelle politique attachera autant d'importance aux passagers qu'aux marchandises.

Points principaux

Du fait qu'elle tient compte de l'importance globale que représente le transport relativement à la bonne marche économique, sociale et politique du Canada, la nouvelle politique impose au gouvernement la tâche d'élaborer un système national.

Au Canada, les transports constituent un éventail de services ayant atteint divers niveaux d'achèvement et de concurrence. Le gouvernement s'occupera davantage de l'expansion ou de l'amélioration de services, que des services parvenus à un stade avancé d'efficacité.

Il est un fait admis que les services bien établis peuvent s'auto-financer; c'est une condition préalable pour que le gouvernement dispose des ressources financières lui permettant de faire progresser le système.

Nouveaux projets

Le gouvernement a l'intention d'en arriver à ce que les services de passagers utilisent de la façon la plus rationnelle les modes aérien, routier et ferroviaire tant des transporteurs privés que publics. Le but est de fournir des services améliorés qui pourront éventuellement s'auto-financer, sauf dans les régions reculées.

Par exemple, le Canadien National et le Canadien Pacifique sont invités à réunir leurs services là où c'est faisable, ce qui se traduira par une amélioration des services sans augmentation notable des coûts.

L'accord de principe a été donné à un projet expérimental qui consiste en un service fréquent et rapide grâce à du matériel ferroviaire léger, moderne et très confortable sur des tronçons choisis du corridor entre Québec et Windsor.

Une tarification plus équitable du transport des marchandises a également été proposée. Actuellement il est moins coûteux d'expédier de l'acier de Hamilton à Vancouver que de Hamilton à Edmonton. Des mesures seront prises afin d'éliminer de telles anomalies.

Le gouvernement fédéral jouera un rôle plus dynamique dans la mise sur pied de services de transport vers les agglomérations éloignées qui ne bénéficient pas d'un accès routier ou maritime ouvert toute l'année.

Rien n'est encore définitivement établi; le groupe poursuit ses travaux, et le Comité parlementaire sur les Transports et les Communications a déjà entrepris d'analyser les projets provisoires. On ne peut encore évaluer l'étendue des changements que subira le système des transports, mais chose certaine, la situation évoluera pour de bon.



Jim Davey

Au moment où nous allions mettre sous presse, nous avons appris la triste nouvelle de la mort tragique de Jim Davey, sous-ministre adjoint principal (projets spéciaux).

Monsieur Davey est arrivé au Canada il y a 21 ans, en provenance d'Angleterre, son pays d'origine; il est entré au service de la Fonction publique en 1968, après avoir fait carrière dans le secteur privé où il avait occupé le poste de recherchiste principal pour le Canadien National et celui de vice-président d'une firme de conseillers en gestion de Montréal. Il a ensuite été prêté en février 1973 comme conseiller spécial du ministre des Transports Jean Marchand, et a été nommé en octobre 1974 sous-ministre adjoint principal aux projets spéciaux.

Monsieur Davey a servi de conseiller à monsieur Marchand au cours de l'importante Conférence sur les perspectives économiques de l'Ouest qui s'est déroulée en juillet 1973. Cette conférence a marqué le premier jalon de la révision de la politique des transports, pour laquelle monsieur Davey a dirigé une étude en profondeur.

Nous désirons offrir nos sincères condoléances à Patricia Davey, à son fils et à ses six filles.



One of the first airmail letters, with the pilot's signature on the back.

HISTORY IS YESTERDAY'S NEWSPAPER

Charles H. Pratt

Aviation history is being made at Mirabel, the world's largest, most up-to-date airport. But fame is a fleeting thing and Mirabel will only hold its place in history until someone builds a larger, better airport.

To be "first", however, earns a permanent place in history and Montreal already qualifies on three counts: the first newspaper delivery by air; the first "unofficial" airmail delivery in Canada; and the first "official" airmail delivery in Canada.

Canada got into the airmail business officially in 1927. The first of these flights was made between Montreal and Rimouski on the lower St. Lawrence to speed up delivery of mail from Europe.

Using a Canadian-built Vickers Vanessa seaplane supplied by the Department of Defence, J. H. Tudhope — a veteran pilot who was later to gain fame in the establishment of airmail routes on the Prairies — picked up 500 lbs. of mail from the incoming S.S. Empress of France on September 9, 1927.

Unfortunately, Tudhope had damaged a float strut on landing at Rimouski. It went unnoticed at the time. Since there was a heavy swell on the river, the pilot boat which had effected the transfer of the mail towed



Captain Brian Peck (right) and Corporal Mathers (left) with another staff officer in front of the JN4 Curtiss.

the aircraft to calmer waters in the lee of Barnaby Island for the take-off. But, while the seaplane was taxiing for the take-off, the pounding of the choppy waters caused the weakened strut on the float to give way. The fuselage tipped, a wing sliced the water and was smashed, and the propeller ripped through the float, cutting it in half.

The pilot boat quickly came to the rescue. First, it transferred the precious mail back to its own decks, and then got a line aboard the plane to tow it back to Rimouski. The additional pounding by the rough seas, however, completed the demolition so that, in the end, only the engine was worth salvaging.

The "airmail" went on to Montreal by train, arriving several days after the Empress of France. A little late, but it was a "first". (Despite the near disaster, a second flight was arranged for September 18, 1927 with mail from Montreal being successfuly delivered to the liner Doric at Rimouski, en route to Britain. Thereafter, it became a regular service.)

The first "unofficial airmail" has an equally interesting story. It was flown from Montreal to Toronto by Captain Brian Peck of the (Canadian) Royal Air Force on June 20, 1918.

(At the time, and for years afterwards, this was considered Canada's first airmail. However, when the official service was inaugurated in 1927, all previous deliveries were declared "unofficial".)

According to records, Captain Peck had flown to Montreal from his base at Leaside, near Toronto, to interest potential recruits in flying careers. He was to do a bit of exhibition flying over downtown Montreal and return the following day. The airport at Montreal was at the Bois Franc Polo Grounds.

Unfortunately, the weather was poor at Montreal, so the stunt flying was cancelled. But, with the idea of gaining some publicity, Captain Peck arranged with the Montreal Post Office to fly mail back to Toronto. Accordingly, 120 letters were selected at random from the regular mail, cancelled with a special rubber stamp and, in many cases, signed by the pilot. To philatelists they are now worth hundreds of dollars.

Not so publicized was the other cargo in the plane. Ontario at the time was "dry", while Quebec was "wet", and a fellow pilot at Leaside was getting married in the near future. So when the plane took off, a large case of "Old Mull" occupied the place of honour in the passenger seat, with the mail bag jammed in on top to ward off the rain. (A Cpl. Mathers was the Observer. Where he sat is anyone's guess.)

With full fuel tanks, the plane was too heavy to be lifted quickly into the air (the weight of Old Mull didn't help) and Captain

Photographs courtesy of Department of National Defence.



Peck's JN4 Curtiss in flight.

Peck had to duck under the telegraph wires along a railway line at the south end of the Polo Field. Seeing more wires ahead, the resourceful pilot banked sharply and followed the railway right-of-way, just a few feet above the rails. Then, with a bridge suddenly appearing ahead, he banked again, out over the river, and was in the clear.

Captain Peck arrived back at Leaside, after stops at Kingston and Deseronto for fuel, at 4:55 p.m. on June 23. He requisitioned a car and personally delivered the "airmail" to the Post Office in Toronto. Presumably the supplies for the wedding also reached their destination, although it was never officially recorded.

William C. Robinson's flight from Montreal to Ottawa on October 8, 1912, is recognized as the first delivery of newspapers by air in Canada.

Robinson, flying a "Lillie" biplane fitted with a rotary engine of his own design, took off from a field at Snowden Junction, Montreal, at 9:05 a.m. on October 8. On board he had bundles of the now-defunct "Daily Mail" to be delivered to points en route, and to Ottawa. One bundle had papers for Sir Robert Borden, Sir Wilfrid Laurier, Sir Charles Fitzpatrick and Mayor Ellis.

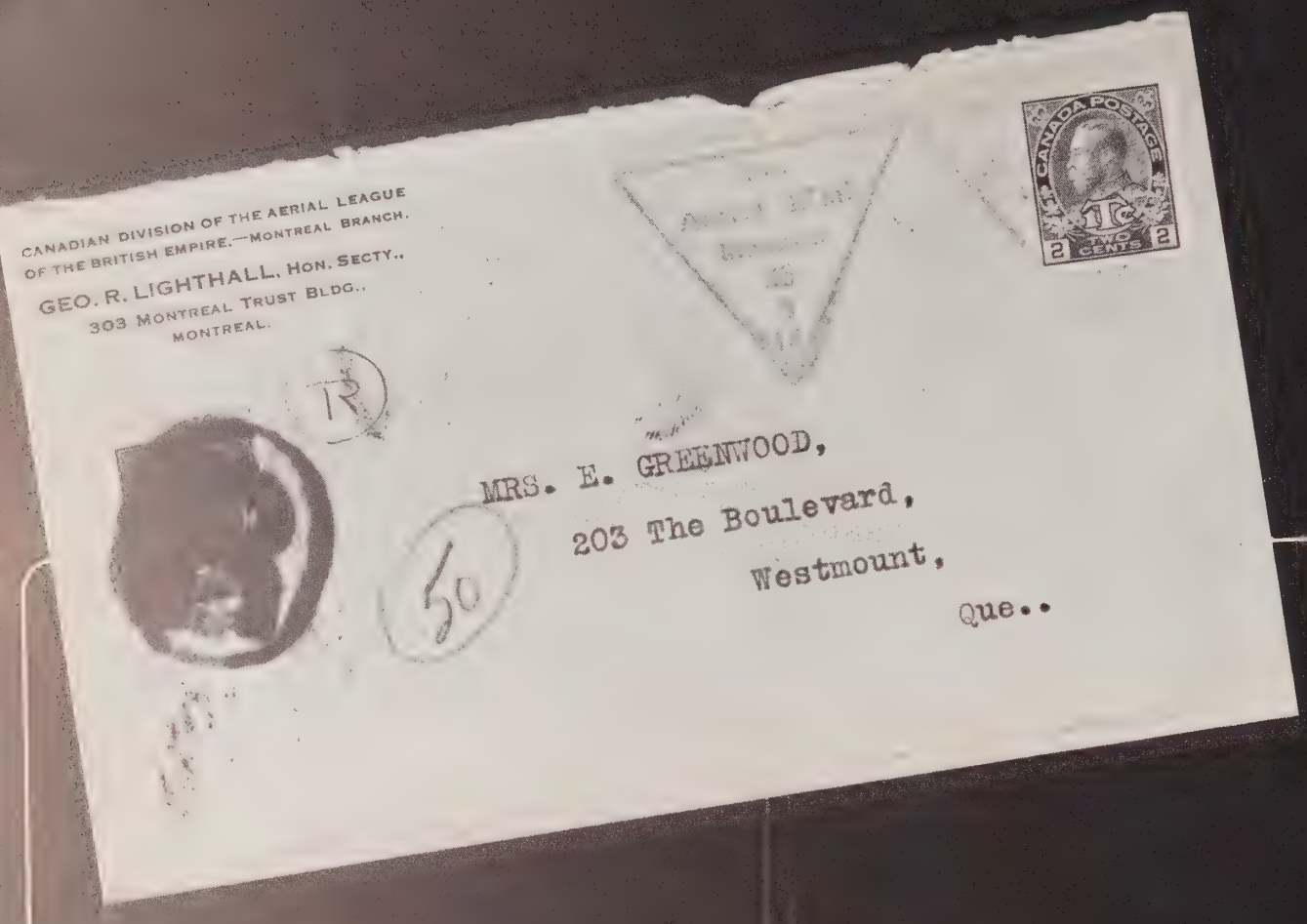
Only 10 minutes out of Montreal, a broken fuel line forced Robinson to land at Lachine. With the help of a local mechanic, he was able to repair the trouble and took off again at 1:05 p.m. He had three scheduled stops to make en route, at Choisy, Caledonia and Leonard.

At the three stops, suitable landing areas had been marked by putting out large crosses, made of muslin, on the ground. The weather was hazy and, crosses or no crosses, the pilot had difficulty in following a course. He had only a C.P.R. Railway map as a guide, and there was a lot of rail lines in the district. He was never certain that he was following the right one.

Ottawa at last, only five hours late. But circling Landsdowne Park Football Field, where he was to land, he saw that it was swarming with people, all invited by Mayor Ellis to see him receive the first newspaper delivered by air. Finally Robinson put down at Slattery's Field, about a mile west of the park, to where Mayor Ellis and much of the crowd hurried to welcome him.

Few Canadians remember Tudhope, Peck or Robinson, although they helped make Canadian aviation history. It is ironic that the papers delivered by Robinson had been the early morning edition, actually printed the previous evening. By the time they arrived in Ottawa, their news was stale, having been supplanted by the afternoon editions of the local journals.

But then, yesterday's newspapers are today's history.



L'ACTUALITÉ D'HIER, C'EST DÉJÀ NOTRE HISTOIRE

par Charles H. Pratt

L'histoire de l'aviation suit son cours à Mirabel, le plus grand et le plus moderne aéroport du monde. La célébrité n'est qu'éphémère et Mirabel n'aura sa place dans l'histoire que jusqu'à la construction d'un aéroport encore plus grand et plus moderne. Toutefois, les précurseurs se méritent toujours une place permanente dans l'histoire; de ce point de vue, Montréal peut déjà s'enorgueillir de trois primeurs canadiennes: La première livraison de journaux par avion; la première livraison non officielle; et la première livraison officielle de courrier par avion.

C'est en 1927 que le Canada s'est lancé,

de façon officielle, dans la poste aérienne. Le premier vol a eu lieu entre Montréal et Rimouski sur le bas St-Laurent afin d'accélérer la livraison du courrier en provenance de l'Europe.

J. H. Tudhope, aux commandes d'un hydravion de type Vanessa construit au Canada par Vickers et propriété du ministère de la Défense nationale, prend cette année-là à son bord 500 livres de courrier venant de l'Empress of France. Tudhope, pilote d'expérience, connaîtra plus tard la célébrité grâce à la création de routes postale aériennes dans les Prairies.

À l'amerrissage, à Rimouski, le pilote endommage, sans s'en apercevoir, une entretoise des flotteurs. Comme il y a beaucoup de vagues sur le fleuve, le bateau pilote qui avait effectué le transbordement du courrier remorque l'hydravion dans des eaux plus calmes, abritées par l'île St-Barnabé, pour le décollage. Au moment où l'avion prend de la vitesse pour le décollage, les secousses des vagues donnent le coup de grâce au flotteur. Le fuselage fait une culbute, une aile fend l'eau et l'hélice coupe le flotteur en deux.

Immédiatement le bateau pilote porte secours à l'hydravion. On transfère d'abord le précieux courrier à bord du bateau, puis on remorque l'appareil jusqu'à Rimouski. Les vagues, assez fortes, achèvent malheureusement de démolir l'hydravion au point que le moteur seul est récupérable.

Le courrier aérien fut acheminé à Montréal par train, arrivant plusieurs jours après l'Empress of France. Il était un peu tard, mais c'était une première. Malgré cet accident qui aurait pu être tragique, le 18 septembre 1927 un second vol apportait, cette fois avec succès, du courrier de Montréal pour le charger à bord du paquebot Doric à destination de l'Angleterre. Ce service a par la suite été poursuivi de façon régulière.

L'histoire du premier vol postal non officiel est tout aussi intéressante. Le courrier a été transporté de Montréal à Toronto par le capitaine Brian Peck de la Royal (Canadian) Air Force le 20 juin 1918.

On a longtemps considéré ce vol comme étant le premier vol postal effectué au Canada et, lorsqu'on a inauguré le service officiel, en 1927, toutes les livraisons passées ont été déclarées non officielles.

D'après les livres de bord le capitaine Peck avait décollé de Leaside, près de Toronto, en direction de Montréal afin de recruter de futurs pilotes. Il devait normalement effectuer un vol de démonstration au-dessus du centre-ville de Montréal et revenir le lendemain. À Montréal, l'aéroport était situé aux terrains de polo de Bois Franc.

Le temps n'était malheureusement pas très beau à Montréal et on annula le spectacle d'acrobatie. Cependant, afin de mousser sa publicité, Peck prit des dispositions avec le Bureau de Poste de Montréal pour ramener du courrier à Toronto dans son appareil. Ainsi, on a choisi au hasard 120 lettres de la poste ordinaire, on les a annulées à l'aide d'une estampe spéciale et certaines de ces lettres ont été signées par le pilote. Des philatélistes paieraient aujourd'hui des centaines de dollars pour les avoir dans leur collection.

On n'a pas fait autant de publicité à propos de l'autre marchandise que transportait l'appareil. À cette époque, l'Ontario était soumis à la prohibition alors que le Québec ne l'était pas et un ami, pilote, devait se marier dans peu de temps. Ainsi, quand l'appareil décolla, la place d'honneur était occupée par une grosse caisse de "Old Mull", recouverte du sac postal pour la protéger de la pluie. (Il y avait également un observateur du nom de Mathers à bord de l'appareil; à vous de deviner où il était assis).

Les réservoirs d'essence pleins, sans oublier la caisse de "Old Mull", l'appareil était trop lourd pour pouvoir s'élever rapidement. Peck dut passer sous les lignes télégraphiques longeant une voie ferrée au sud du champ de Polo. Il aperçut d'autres fils devant lui et effectua un virage prononcé sur la gauche, puis suivit la voie ferrée, à quelques pieds au-dessus des rails. Il se trouva soudainement devant un pont, vira de nouveau, vola au-dessus de la rivière et prit enfin de l'altitude.

Après des escales à Kingston et Deseronto pour le ravitaillement, il atterrit à Leaside le 23 juin, à 16 h. 55. Peck demanda une voiture et alla lui-même livrer le courrier au Bureau de poste, à Toronto. Bien que les archives n'en parlent pas, on peut supposer que l' "Old Mull" atteignit aussi sa destination.

Le vol Montréal-Ottawa effectué par William C. Robinson, le 8 octobre 1912, marque la première livraison aérienne de journaux au Canada.

Aux commandes d'un petit biplan équipé d'un moteur rotatif à cylindres en rangées, de sa conception, Robinson décolla d'un champ à Snowdon Junction, Montréal, à 9:05 du matin. Il transportait plusieurs sacs du maintenant défunt "Daily Mail" qu'il devait livrer à certains endroits en cours de route, et à Ottawa. Dans un de ces sacs il y avait du courrier destiné à Sir Robert Borden, Sir Wilfrid Laurier, Sir Charles Fitzpatrick et au maire Ellis.

À peine 10 minutes après le décollage de Montréal, une rupture de la conduite d'essen-

ce obligea Robinson à atterrir à Lachine. Avec l'aide d'un mécanicien de l'endroit, il arriva à réparer la défectuosité et reprit la route des airs à 13 h. 05. Le voyage comportait trois arrêts prévus: Choisy, Calédonia, et Léonard.

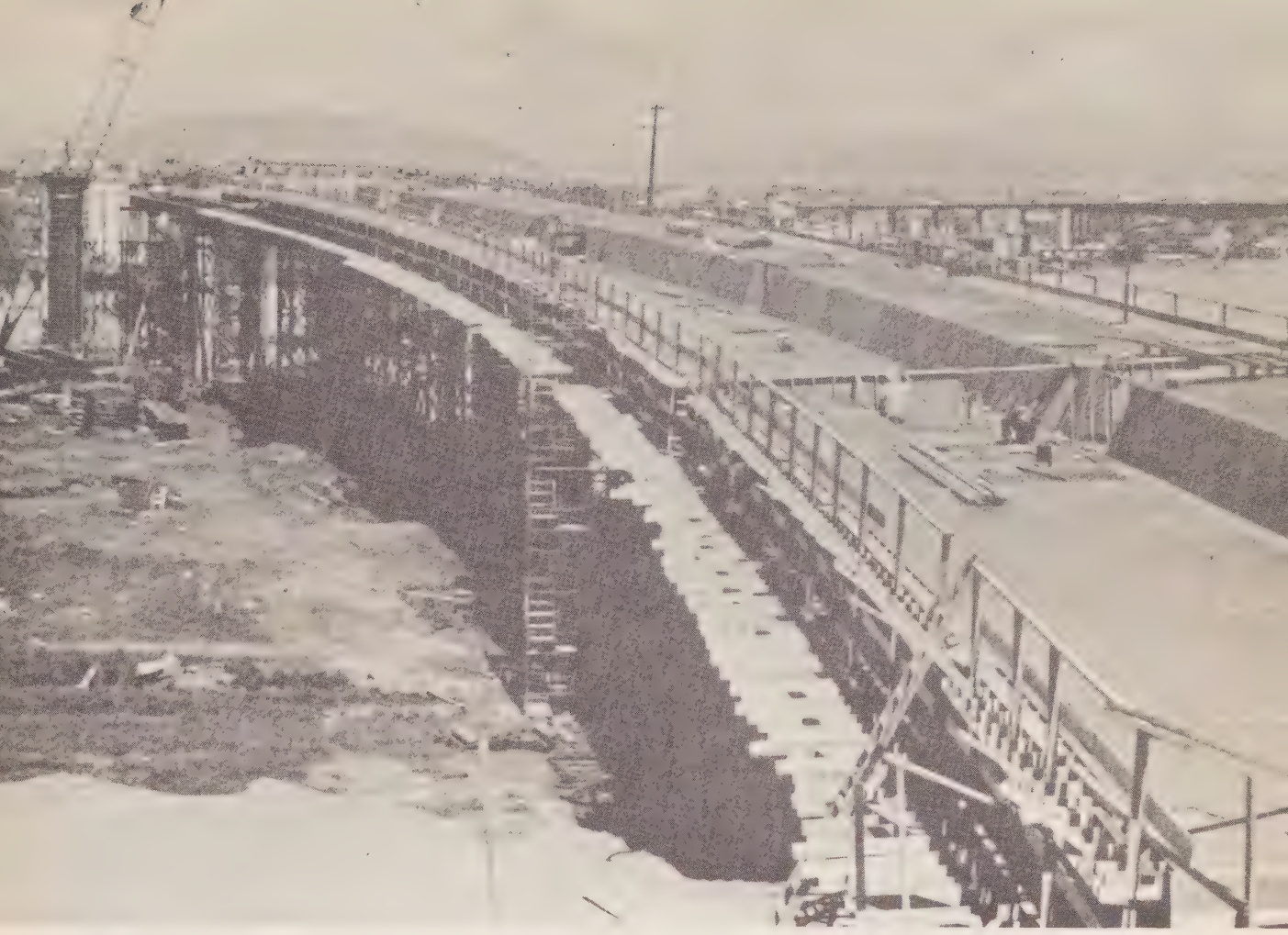
À ces trois endroits on avait pris soin de trouver un terrain propice à un atterrissage que l'on avait marqué avec d'énormes croix de mousseline. Le temps était brumeux et, croix ou non, le pilote éprouva de la difficulté à trouver son chemin. Une carte des voies ferrées du CPR constituait à peu près son seul guide; or il y avait avait tellement de voies ferrées dans cette région qu'il n'était jamais certain d'être au-dessus de la bonne.

Puis il arriva à Ottawa avec à peine cinq heures de retard. Survolant le terrain de football du Parc Lansdowne qui devait lui servir de terrain d'atterrissage, le pilote s'aperçut qu'il fourmillait de gens invités par le maire Ellis pour cette première livraison de journaux par avion. Il dut se poser à Slattery's Field, environ un mille à l'ouest du Parc, et le maire et la majeure partie de la foule accoururent pour l'accueillir.

Peu de Canadiens se souviennent de Tudhope, Peck ou Robinson; ils occupent pourtant une place importante dans l'histoire de l'aviation canadienne. Fait assez étrange, les journaux livrés par Robinson étaient ceux de l'édition du matin, imprimés la veille. À leur arrivée à Ottawa, les nouvelles qu'ils contenaient étaient déjà désuètes, supplantées par les éditions de l'après-midi des journaux de l'endroit. Mais ces journaux de la veille ont maintenant pris place dans notre histoire.



The Vickers-Vanessa



Get Me To The Terminal On Time

by Mary Woodbury

Getting to the airport quickly is of as much concern to the air traveller these days as getting to his or her destination. In this age of supersonic flight, the access road is a vital link in the provision of safe, rapid travel.

The Ministry is involved, through its Air Administration, in every aspect of air travel. One of the latest signs of that involvement is the new Arthur Laing bridge in Vancouver, British Columbia. It is the first bridge built by the Construction Engineering and Architecture Division of the Ministry. Its completion assures easy access to the Vancouver International Airport on Sea Island for the

thousands of air travellers and greeters in Canada's West Coast city.

Traffic studies commissioned several years ago by the Ministry revealed that the existing road system was completely inadequate for handling the increase in traffic between the city and the airport. Without some action the situation would become intolerable.

The new route permits direct access from the municipality of Richmond, decreases travelling time and shortens the trip between the airport and downtown Vancouver by two miles.

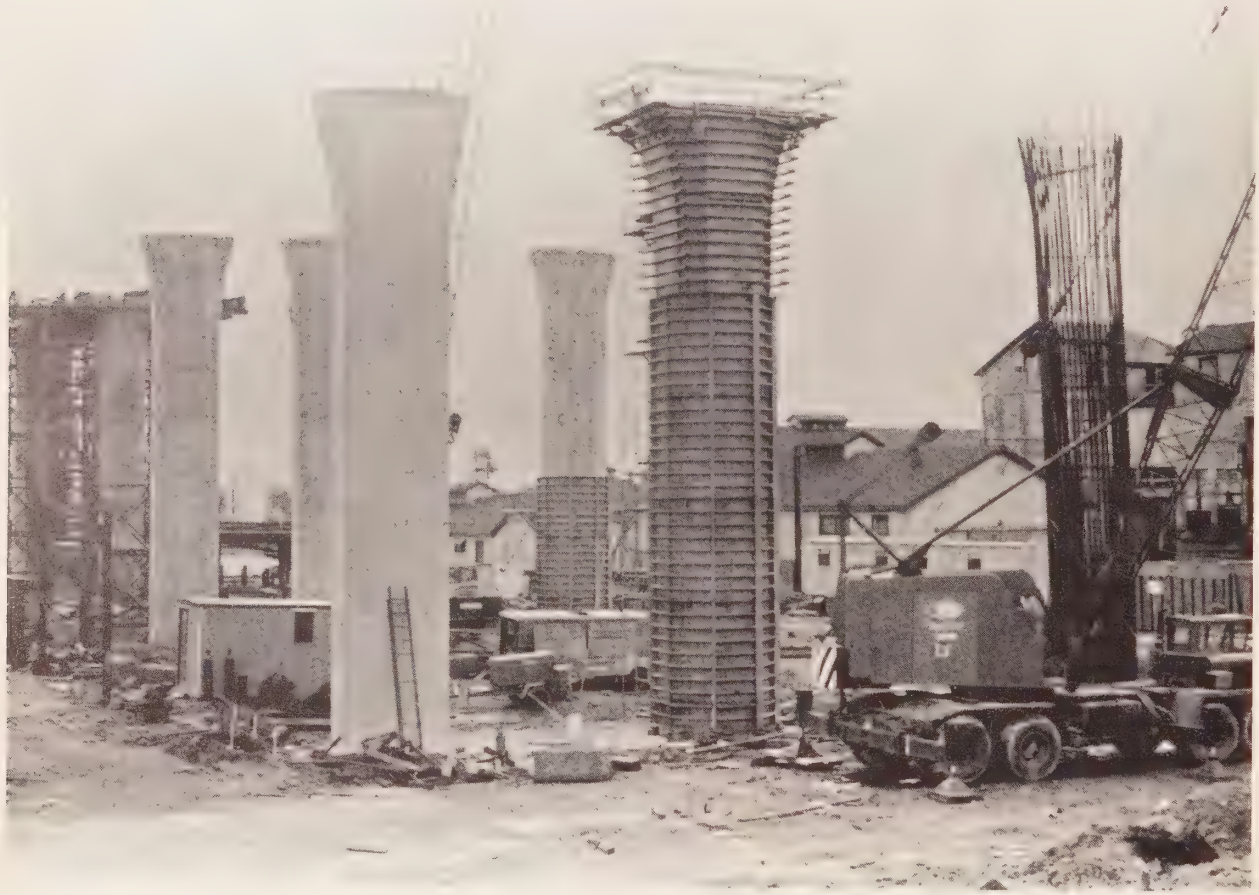
The total cost of the project was approximately $23 million. Some $11.6 million was spent on the erection of the mile-long bridge, $4.5 million was used for expropriation purposes and the remainder for access roads.

The municipality of Vancouver has undertaken the modifications and widening of streets necessitated by the development of the road system on the northern section of the project. It will also assume responsibility for landscaping the major arteries which pass over its territory.

Construction begun in 1973 and was completed last August. The official inauguration will be held in the fall, when the bridge will be named "Arthur Laing" in honour of the late Senator from British Columbia who was Minister of Public Works when the project was announced.

The regional office of the Airports and Properties Division will be responsible for the maintenance and administration of the bridge.

The accessible airport is just another of those things that we take for granted, as we go soaring above the clouds. But, a few know otherwise — those who got us to the terminal on time.





Pour être à L'aéroport à temps

par Normand Héroux

Pour le voyageur moderne l'importance de se rendre à l'aéroport rapidement est tout aussi vitale que celle d'arriver à son ultime destination dans le moins de temps possible. A l'ère supersonique la voie d'accès à l'aéroport se doit d'être garante d'un voyage sûr et rapide.

Notre ministère, par ses services de l'Administration de l'air est impliqué dans tous les aspects des voyages aériens. Une des manifestations de cet état de chose nous apparaît de façon fort révélatrice avec la décision de la construction du pont Arthur Laing à Vancouver (C.-B.). Il s'agit du premier pont construit par les services de la division de la Construction, Génie et Architecture du ministère. Ce pont garantit un accès facile à l'aéroport de Vancouver sur Sea Island pour des milliers de voyageurs de la métropole de la Colombie-Britannique.

Des études de trafic exécutées depuis plusieurs années pour le compte du ministère, ont révélé que le présent système routier entre l'aéroport et le centre-ville est absolument incapable d'absorber les augmentations prévues. La situation, si laissée à elle-même serait vite devenue intolérable.

Le nouveau tracé permet un accès plus rapide depuis Richmond (C.-B.), et diminue non seulement le temps mais aussi la distance entre le centre-ville et l'aéroport; on parcourt ainsi plus de deux milles de moins.

Le coût total du projet a été de quelque 23 millions de dollars. De cette somme $11.6 millions sont allés à l'érection de la structure du pont, $4.5 millions ont été dépensés à des fins d'expropriation et les $7 millions restant ont été partagés entre les diverses routes d'accès.

La municipalité de Vancouver s'est chargée de procéder aux modifications et élargissements des rues qui s'imposaient suite au réaménagement du réseau du côté Nord du projet. La municipalité aussi se charge de l'aménagement paysager des artères du projet passant sur son territoire.

La construction du pont et des routes d'accès a débuté en 1973 et tout sera prêt pour une ouverture au cours de l'automne de 1975. L'inauguration officielle aura lieu vers la fin de l'automne, et il sera baptisé Arthur Laing en l'honneur du regretté sénateur de la Colombie-Britannique qui était ministre des Travaux publics à l'époque de l'annonce du projet.

Le ministère des Transports par l'entremise de son bureau régional, division aéroports et immeuble, sera responsable de l'entretien et de l'administration du pont.

L'accessibilité de l'aéroport est l'une de ces nombreuses choses que nous prenons pour acquis pendant que nous survolons les nuages, cependant, ceux qui nous permettent d'être à l'aéroport à temps savent que ça ne se fait pas tout seul.



IALA – 1975 – AISM

by Hugues Lacombe

The delegates and participants in the IXth International Conference on Lighthouses and Other Aids to Navigation looked rather tired when they left Ottawa in mid-August after an extremely busy two weeks of hard work. To the many delegates who were visiting Canada for the first time, the Conference was an occasion to acquaint themselves with our way of life and our way of thinking.

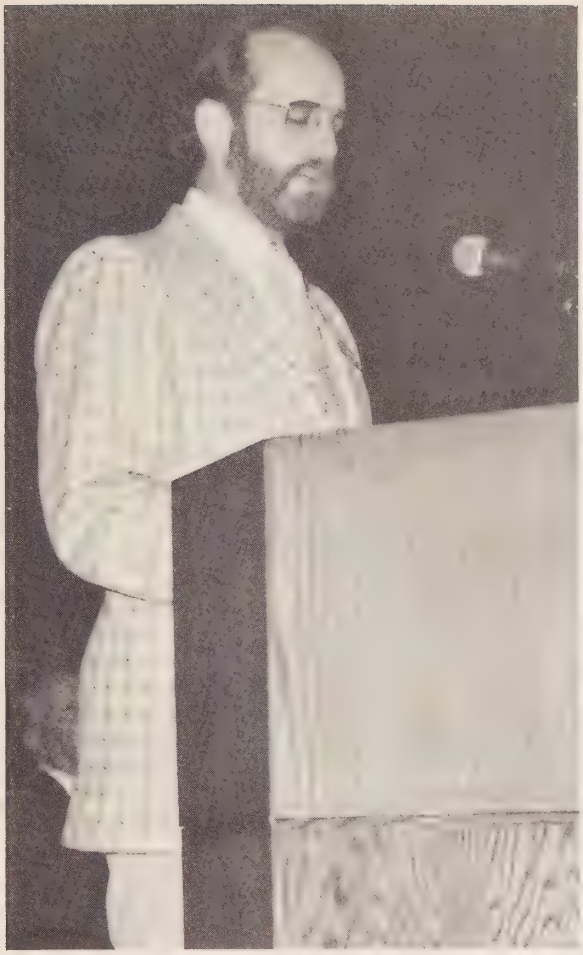
When it was all over the approximately 300 delegates representing 58 countries expressed their thanks and their satisfaction to the organizers. The success of the Conference, however, was due as much to their own work as to some 100 papers which were presented during the Conference held in the Canadian Government Centre. A strong desire to collaborate and to exchange information permeated the technical sessions and in this respect the aims of the International Association of Lighthouse Authorities (IALA) were met.

This Paris-based association, created in 1926, meets every five years. It was the first time the Conference was held in Ottawa; the last conference assembled at Stockholm, Sweden, in 1970. In five years time the delegates will meet in Japan which, at the end of this year's Conference, acquired the vice-presidency of the international association. The new President of I.A.L.A. is John Ballinger, Director of Aids and Waterways in the Ministry of Transport.

Mr. Ballinger acted as secretary-general of the 1975 Conference; he was master of ceremonies on the night of August 3, when the Conference opened in Ottawa's National Arts Centre. Guest speaker for the evening was Transport Deputy Minister Sylvain Cloutier. He warned the delegates that "with the growing number of super ships and the accompanying threat of pollution, our needs for expertise in the development of navigational aids has never been greater and has obliged us all to undertake extensive research for new techniques and navigational technology".

And this is why the delegates were meeting in Ottawa. The topics discussed at the Conference ranged from new energy sources to automation, remote control and the design of fixed structures and floating work.

The Ministry is carrying out a number of experimental developments aimed ultimately at providing safer navigation and a better service to the shipping community. New systems are being developed, such as the Buoy Monitoring and Alarm System (BMAS) and the Buoy Attitude Indicating System (BAIS). Various buoys are undergo-



Sylvain Cloutier, Transport Deputy Minister, addresses the opening of the IALA Conference.

ing extensive testings, such as the pop-up-buoy and the thermosiphon buoy which uses compressed ammonia to de-ice itself.

Nuclear energy is being tested as a possible source of energy for remote and inaccessible navigational aids in the Arctic. Solar batteries, wind generators, propane gas thermoelectric generators as well as various lamps are also undergoing tests.

Canada is in the process of automating its various lighthouses, in line with the world-wide trend. Sweden, for example, has already automated all of its light stations. Delegates at the Conference had the opportunity to visit the Long Island testing site, 15 miles from Ottawa, where a fully automated replica of a standard light station has been undergoing trials. Some of this equipment was also shown at the industrial exhibition which was held in the Chateau Laurier hotel from August 5-8. This exhibition allowed some 35 international manufacturers to show the delegates and the general public the latest equipment available in the field of marine aids to navigation. The exhibition was officially opened by Dr. Sydney Wagner, Director General of Science and Technology for Industry, Trade and Commerce.

The British, U.S. and Japanese industries hosted hospitality nights and these many receptions allowed everyone to meet in a more informal manner. The delegates and wives were also hosted one evening by the three British lighthouse authorities.

The highlight of the social program was a cruise on the St. Lawrence River from Gananoque, Ontario to Brockville for both delegates and wives. This was preceded by a tour of Fort Henry in Kingston. The cruise was designed to be informative as well as enjoyable. The cruise vessel followed a special course to allow visitors to see first-hand the various aids to navigation used in Canadian waters.

The Conference officially ended August 14 with a banquet and ball in the Chateau Laurier Hotel. Guest speaker was W. A. O'Neil, Deputy Administrator of the Canadian Marine Administration and Commissioner of the Canadian Coast Guard. Mr. O'Neil reviewed the accomplishments of the Conference and thanked the delegates for the frank discussions held during the two-week period. He also commented on the fact that on that very day Transport Minister Jean Marchand had announced that the Marine Services component of the Marine Administration was being renamed the Canadian Coast Guard.

After the closing banquet, some delegates went on a technical post-conference tour of the St. Lawrence River area.

All participating countries benefitted from this Conference as a wealth of information was exchanged and individuals made new friends. The Ministry of Transport was happy to host this Conference and to contribute to the advancement of the fast-changing field of marine aids to navigation.



John Ballinger, Director of Aids and Waterways in the Ministry,is the new President of IALA.





TRANSCAN/MINI-REPORTAGES







JIM MARTIN

incentive winner

by Peter Twidale

Jim Martin, until recently with MOT's Telecom Division, has made a hobby of winning incentive awards. His total of 20 over the past 25 years is a federal public service record. In fact, the Incentive Award Board was so pleased it circulated a bulletin announcing Mr. Martin's achievement.

It started many years ago when Mr. Martin, who retired this year from London Aeradio, found he had a way with ideas. He liked working with ideas, so he made it his hobby. The 20 awards all came after 1952, when cash and token awards were first allowed.

Some of Mr. Martin's suggestions were technical, others involved operations procedures.

In the technical realm, he alerted the operations staff about a Mayday signal that went off when military pilots used ejector seats to bail out of aircraft. The emergency system was already in effect but apparently no one had told MOT. Mr. Martin learned about it by chance, while visiting the factory where the seats were made. For this he won an award in 1957.

Another idea was to ban the use of carbon tetrachloride for cleaning electronic gear in closed quarters. Mr. Martin read a newspaper article about a man who was killed by carbon " tet " fumes while cleaning his car engine with the fluid. MOT switched to other types of fluids.

In the early 1950's, when radio operators were still expected to do their own maintenance, Mr. Martin discovered that the Sarnia transmitter was being serviced by technicians from London. He suggested that the five qualified operators at the site do their own maintenance.

A suggestion concerning direct pilot-controller communications developed into something quite big. He proposed that pilots talk directly by VHF radio with controllers at the central airport in each region. For example, a Toronto controller talks directly with an aircraft over North Bay rather than having the messages relayed by a North Bay operator. The system, now common in Canada, is faster and more efficient.

Some of the ideas are remarkably logical, once they are expressed. There's the one about counting postage stamps, for example. Up until about 1955 MOT field offices were supplied with regular postage stamps overpressed with the letters OHMS. Every time a letter was sent, office personnel were required to write down the address, date and postage. It became a time-consuming operation at a district office which might have to keep records on 1,200 stamps a day. Furthermore, nobody ever came around to check up on the records. MOT was happy to put an end to the custom.

Mr. Martin's favorite suggestion got him nothing more than a handshake — and the satisfaction of seeing it put to work. The idea, to amalgamate several marine and air stations, was made in the 1940's, before any awards were offered.

The London resident never did make big money from his ideas. The top award was $100. Usually it was closer to $30, or a token such as a suitcase or an electric clock. The award was found more in the enjoyment of the hobby, and seeing his ideas become productive.

However, Mr. Martin says his hobby helped him win jobs at MOT. He managed three Marine and two Aeradio communica-

tion stations during more than 30 years with MOT.

Why do some people get good ideas, over and over again, while the rest of us are still waiting for the first brainwave? Mr. Martin has a pretty good record, so we asked him to jot down a few hints on incentive awards:

"First of all, MOT *is* looking for ideas. The Ministry's incentive award plan invites good, constructive ideas on how to improve services.

"Stay away from beefs; there are other channels for them. Complaints are not invited. Neither are sweeping ideas involving government policy.

"Make a habit of looking around with improvement in mind. When you hit on an obvious idea, write it down. Later you can review the idea and decide whether or not to follow up on it. If you do keep going, you may have to delve into reference works. At some point make a list of all possible solutions.

"Once you've selected the best solution, package it in a well-written, well-documented proposal. Include photos, diagrams and material lists, if possible.

"Often worthwhile ideas are gleaned from trade and technical journals.

"There are certain areas or methods that are a productive source for ideas. My selection includes: technical (for example, electricians have been rewarded for suggestions on runway lights), safety and the elimination of hazards, scrap and waste reduction, operations procedures (sometimes there's a better way), working time reduction, conservation of property and, of course, ways to save money.

"Many organizations keep a record of an employee's suggestions. It can be a factor leading to promotion."



JIM MARTIN

primes d'encouragement

par Peter Twidale

Jim Martin qui, il n'y a pas si longtemps, travaillait à la Division des télécommunications du M.D.T., ne cesse de mériter des primes d'encouragement; au cours des 25 dernières années, il en a reçu 20, ce qui constitue une chiffre record dans la Fonction publique fédérale. De fait, le Conseil des primes d'encouragement est si fier de cet exploit qu'il a fait circuler un bulletin à ce sujet.

Tout a commencé il y a de nombreuses années lorsque M. Martin, qui cette année a quitté la station de radio aéronautique de London, s'est aperçu qu'il avait des idées et savait en tirer parti; il en a donc fait son passe-temps. Ses 20 primes lui furent remises après 1952, année au cours de laquelle on accorda pour la première fois des primes sous forme de sommes en espèces et de boutons.

Certaines des suggestions de M. Martin relevaient du domaine technique, d'autres visaient des méthodes d'exploitation.

Dans le domaine technique, il a mis en garde le personnel d'exploitation à propos d'un système de signal de détresse qui quittait les ondes dès que les pilotes militaires

utilisaient leurs sièges éjectables pour évacuer un avion. Le système était déjà utilisé, mais apparemment le M.d.T. n'avait pas été informé de cette particularité. M. Martin a fait par hasard cette découverte en 1957 lors d'une visite à l'usine où l'on fabriquait les sièges et cela lui a valu une prime.

Une autre de ses idées a été d'abolir l'usage du tétrachlorure de carbone pour nettoyer des appareils électroniques dans un local fermé. M. Martin avait lu un article dans un journal à propos d'un homme mort asphyxié par les vapeurs de carbone, tandis qu'il nettoyait le moteur de son automobile avec ce produit. Sur la suggestion de M. Martin, le M.d.T. a adopté d'autres genres de nettoyants.

Au début des années '50 on demandait encore aux opérateurs radio d'effectuer eux-mêmes les travaux d'entretien. M. Martin a découvert que le poste émetteur de Sarnia était entretenu par des techniciens de London; il a donc suggéré que les cinq opérateurs compétents du poste se chargent de ces travaux.

Une suggestion relative aux communications directes entre pilotes et contrôleurs a pris pas mal d'ampleur. En effect M. Martin a proposé que les pilotes communiquent directement par radio à très haute fréquence avec les contrôleurs de l'aéroport central de chaque région. Ainsi, un contrôleur de Toronto communique avec un avion qui passe au-dessus de North Bay plutôt que de faire relayer ses messages par un opérateur de North Bay. Ce système, maintenant utilisé couramment au Canada, est plus rapide et efficace.

Quelques-unes de ses idées se révélèrent d'une logique remarquable à *prime* abord; par exemple, celle qui a mis fin au comptage des timbres-poste. Jusqu'à 1955 environ, on fournissait aux bureaux régionaux du M.d.T. des timbres-poste ordinaires portant les lettres OHMS (au service de Sa Majesté). Chaque fois qu'il envoyait une lettre, le bureau devait inscrire l'adresse, la date et l'affranchissement. Il fallait parfois conserver un relevé de 1 200 timbres par jour et c'était devenu un travail qui prenait beaucoup trop de temps pour un bureau de district. De plus, personne ne venait jamais vérifier les dossiers. Le M.d.T. consentit avec plaisir à mettre fin à cette pratique.

La suggestion favorite de M. Martin ne lui a valu qu'une poignée de main et la satisfaction de la voir utilisée. L'idée de fusionner plusieurs stations martimes et aéronautiques a été proposée dans les années '40, avant qu'on commence à offrir des primes.

Résidant de London, il n'a jamais fait beaucoup d'argent avec ses idées; le maximum a été de $100. Il recevait habituellement environ $30, ou un cadeau comme une valise ou une horloge électrique. Il trouvait sa "récompense" dans la joie de s'adonner à un passe-temps et de voir ses idées se concrétiser.

M. Martin raconte que son passe-temps lui a valu des emplois au M.d.T. Il a dirigé trois stations de communication par radio maritimes et deux aéronautiques, durant plus de 30 ans, pour le compte du M.d.T.

Pourquoi n'y a-t-il que quelques personnes qui ne cessent d'avoir de bonnes idées, alors que la majorité d'entre nous attendons toujours la première inspiration? M. Martin détient un record appréciable, c'est pourquoi nous lui avons demandé de nous donner quelques conseils à propos des primes d'encouragement:

Tout d'abord, le M.d.T. est à la recherche d'idées. Le programme des primes d'encouragement du Ministère sollicite les idées constructives pour améliorer les services.

Evitez les récriminations et les plaintes, il existe d'autres moyens de les faire connaître. Les idées révolutionnaires concernant la politique du gouvernement ne sont pas non plus de ce domaine.

Habituez-vous à observer avec l'intention d'améliorer. Lorsqu'une idée vous frappe, mettez-la sur papier. Plus tard vous pourrez l'étudier et décider d'y donner suite ou non. Si vous décidez de la poursuivre, vous aurez peut-être à fouiller dans des travaux de référence. Faites une liste de toutes les solutions possibles.

Lorsque vous aurez choisi la meilleure solution, présentez-la sous la forme d'une proposition bien exprimée et bien documentée. Incluez des photos, des diagrammes et des listes de documents, si possible.

Vous trouverez souvent de bonnes idées dans les revues commerciales et techniques.

Certains domaines ou méthodes sont une source d'inspiration. En voici quelques-unes: la technique (par exemple, certains électriciens ont été récompensés pour des suggestions sur les feux de piste), la sécurité et la suppression des dangers, la diminution des déchets et des rebuts, les méthodes d'exploitation (il existe parfois de meilleures façons de fonctionner), la diminution des heures de travail, la conservation des biens et évidemment les moyens d'économiser de l'argent.

De nombreux organismes conservent un dossier des suggestions d'un employé. Elles peuvent en effet contribuer à son avancement. Il fut un temps où les offres fédérales d'avancement comportaient la question: "Avez-vous déjà reçu une prime d'encouragement?"

awards / primes



B. R. W. Tughan was presented with his 8th Suggestion Award. This award concerned proposed modifications to the ILS (Instrument Landing Systems) equipment. Mr. Tughan is with the Telecommunications & Electronic Faculty of MOTTI. In the photograph above J. Y. Clarke, left, Director General of MOT's Training Institute Development presents the award to Mr. Tughan, centre, while Art M. Seymour, right, Manager of the Telecommunications & Electronic Faculty looks on.

B. R. W. Tughan s'est vu remettre une huitième prime à l'initiative. Cette prime est venue récompenser une proposition de modifier l'équipement du Système d'atterrissage aux instruments. Monsieur Tughan travaille au département des Télécommunications et Electronique de l'IFMDT. Sur la photographie ci-dessus, J. Y. Clarke, à gauche, directeur de l'Institut de formation du M.d.T. remet la récompense à B. R. W. Tughan au centre, tandis que Art Seymour à droite, gestionnaire de la Faculté des télécommunications et d'électronique assiste à la remise.



The Malton Airport Fire Department won the "Fyr-Fyter" Trophy for excellence in a training program presentation on fire fighting. Mel Hicks, Acting Fire Chief (centre) receives the trophy from Leon Radzevicius, Manager, Airport Services. Firefighter George Knight (left) looks on.

Le département des Incendies de l'aéroport Malton s'est mérité le trophée de lutte contre les incendies, pour l'excellence de la présentation d'un programme de formation. Mel Hicks, chef intérimaire de la section des Incendies, au centre, accepte le trophée des mains de Leon Radzevicius, gérant des Services des aéroports. Le FR3 George Knight, à gauche, regarde la scène.

TRANSPORT CANADA PRESENTS TROPHY

TRANSPORTS CANADA PRÉSENTE UN TROPHÉE



Richard Pyne, a lawyer with the Justice Department, won the Transport Canada trophy for placing second in the first annual National Capital Marathon, a 26-mile race, on May 25. He was presented with the award by Carmen Brodsky, president of the MOT Recreation Association. The Transport trophy is presented to the federal public servant who finishes the marathon first. The 41.8 kilometre event was won by a Hull school teacher.

M. Richard Pyne, avocat au ministère de la Justice, a remporté cette année le trophée Transports Canada, décerné au fonctionnaire fédéral qui a occupé la meilleure place dans le marathon de la Capitale nationale qui s'est tenu pour la première fois cette année. M. Pyne s'est classé deuxième, derrière un professur d'une école de Hull, dans la course de 26 kilomètres qui a eu lieu le 25 mai. Mme Carmen Brodsky, présidente de l'Association récréative du Ministère des Transports, lui remet le trophée.



Energy Saving Ideas
Idées pour Économiser l'Énergie

The editors of Transport Magazine present this month's award for the "Energy Saving Idea of the Month Contest" to J. Pierpont Throop, who organized the now famous Stonewall to Winnipeg commuter pool. Mr. Throop, a transportation engineer and part-time rodeo star, developed the SWCP in response to the Ministry's current campaign to elicit original and practical energy-saving ideas from MOT employees. Actually you may not believe it, but the information you have just read is not quite true. The only part that you should believe is the business about the Ministry soliciting ideas which could lead to savings in energy and as a result, dollars. If you have any such ideas, however simple they may seem, please send them to:

Paul Sheppard
Tower A.

"Uncaptioned" photo — Courtesy Public Archives of Canada.

Les rédacteurs du magazine Transport Canada rendent hommage au gagnant du mois au "Concours mensuel de la meilleure idée pour économiser l'énergie" M. J. Pierpont Throop, qui a organisé le groupe, désormais célèbre, d'abonnés du train de banlieue voyageant de Stonewall à Winnipeg. M. Throop, ingénieur spécialisé dans le domaine des transports, et à ses heures, vedette de rodéo, a mis au point le S.A.S.W. à l'occasion de la campagne actuelle menée par le Ministère visant à faire jaillir chez les employés du M.d.T. des idées originales et pratiques pour économiser l'énergie. Vous serez peut-être un peu surpris, mais de fait, ce que vous venez de lire n'est pas tout à fait vrai. En effet, il n'existe pas de M. Throop, ni de groupe d'abonnés de train de banlieue; ce qui est vrai toutefois c'est que le Ministère sollicite des idées qui peuvent faire économiser de l'énergie et par conséquent de l'argent. Si vous avez une de ces bonnes idées, si simples qu'elles vous paraissent, veuillez les faire connaître à:

Paul Sheppard
Tower A.

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A delegation representing Western European airports spent five days in Canada last February learning about our methods of snow removal and ice control. The six delegates experienced the effects of Canadian winters first hand when their flight from Europe to Montreal was rerouted to Toronto due to runway icing conditions.

The delegation, representing the Western European Airport Association's study group on winter conditions, was hosted by MOT's Mobile Support and Stationary Equipment Division and Airport Requirements Division.

The group visited Toronto, Montreal and Ottawa International airports, the Montreal STOLport, and the New Montreal International Airport at Mirabel. At the last stop they witnessed a demonstration of the new single engine hydrostatic drive snowblower, the first of its kind used anywhere on an airport.

En février dernier, une délégation de représentants des aéroports de l'Europe de l'Ouest a passé cinq jours au Canada afin d'étudier nos méthodes de déneigement et de déglacement. Les six délégués ont connu pour la première fois les effets de l'hiver canadien lorsque leur avion à destination de Montréal, a dû être détourné sur Toronto à cause des pistes couvertes de glace.

La Division de l'équipement mobile et fixe et la Division des besoins des aéroports du M.d.T. ont été l'hôte de la délégation, qui représentait, pour le compte de l'Association des aéroports d'Europe de l'Ouest, le groupe d'étude sur les conditions hivernales dans les aéroports.

Le groupe a visité les aéroports internationaux de Toronto, de Montréal et d'Ottawa, l'ADACport de Montréal et Mirabel, le nouvel aéroport international de Montréal. À la dernière escale, ils ont assisté à la démonstration du fonctionnement du nouveau chasse-neige monomoteur à commande hydrostatique, la première du genre utilisé dans un aéroport.



NATIONAL HARBOURS BOARD POLICE
POLICE DU CONSEIL DES PORTS NATIONAUX



Constable Harold Lockwood, NHB Police, Port of Vancouver, is shown at his recent appointment by Hon. David R. Verchere, Justice of the Supreme Court of British Columbia. Members of the force who are appointed by the courts are trained in all aspects of police work and provide all the services of any other Canadian force. They have authority of police officers to prevent crime and enforce the Criminal Code, other laws of Canada, provincial acts and NHB by-laws on and near NHB property. This modern force carries firearms, uses radio communications, conducts foot and mobile patrols and carries out investigations.

On aperçoit ici l'agent Harold Lockwood du port de Vancouver lors de son assermentation par l'honorable juge David R. Verchère de la Cour suprême de Colombie-Britannique. Les membres de ce corps de police doivent prêter serment devant un juge lors de leur nomination; ils reçoivent un entraînement équivalent à tout policier canadien et remplissent tout l'éventail habituel de ses tâches. Ils ont le pouvoir des policiers en vue de prévenir les crimes, de faire respecter le Code criminel, les autres lois canadiennes, les lois provinciales ainsi que les règlements du CNP à proximité et sur les terrains appartenant au Conseil.

Ce corps de police est armé, utilise les communications radio, effectue des patrouilles à pied et en voiture et procède à des enquêtes.

MEDAL FOR BRAVERY
MÉDAILLE DE BRAVOURE

Five members of the NHB Police Force received the Medal of Honour for bravery at a recent investiture at Rideau Hall, residence of the Governor General. The recipients are shown in the back row, left to right: Constables Yves Beaudoin, M.B., Gervain Albert, M.B., Michel Guilbault, M.B., and Yves Audet, M.B. Also decorated was Lieutenant Marcel Mailloux, M.B., second from the right in the first row. Others in the first row, left to right, are Guy Beaudet, Vice-Chairman, NHB; Donald N. Cassidy, Director General, Police and Security; Transport Minister Jean Marchand, Del E. Taylor, Chairman, NHB, and Chief Superintendent Lucien Belair.

La photographie ci-dessus a été prise plus tôt cette année à l'Hôtel du Gouvernement, lors de la remise de médailles de bravoure à des membres de la police du CPN. Dans la dernière rangée de gauche à droite apparaissent les agents Yves Beaudoin, Gervain Albert, Michel Guilbault, Yves Audet, qui à l'instar du lieutenant Marcel Mailloux, deuxième à droite dans la première rangée, se sont vus décerner une médaille d'honneur. Dans la rangée d'en avant, de gauche à droite, on voit Guy Beaudet, vice-président, Donald N. Cassidy, directeur général de la police du CPN, l'honorable Jean Marchand, Del E. Taylor, président, et à côté du lieutenant Mailloux, le surintendant en chef Lucien Bélair.



retirements / retraites

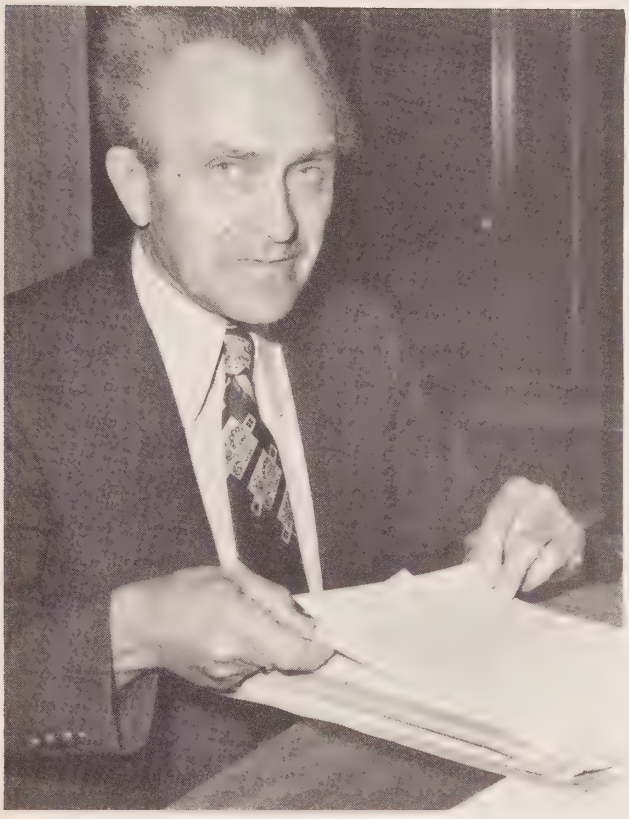


Photographs by Yvon Bastien

Photographie par Yvon Bastien

Earle F. Porter, Director General of the Telecommunications and Electronics Bureau of the Ministry retired in September after over 34 years. His last assignment with the Ministry was to attend the Aerosat Council meeting in London, England as the MOT representative. Mr. Porter and his wife, Velma will take up residence in their native Nova Scotia.

Earle F. Porter, directeur général du bureau des Télécommunications et de l'Electronique, a pris sa retraite au mois de septembre, après avoir travaillé plus de 34 ans au service du Ministère. Sa dernière affectation au Ministère fut d'assister, en tant que représentant du MDT à une conférence du Conseil de l'Aerosat qui s'est tenue à Londres. Monsieur Porter et son épouse Velma iront habiter en Nouvelle-Ecosse d'où ils sont originaires.



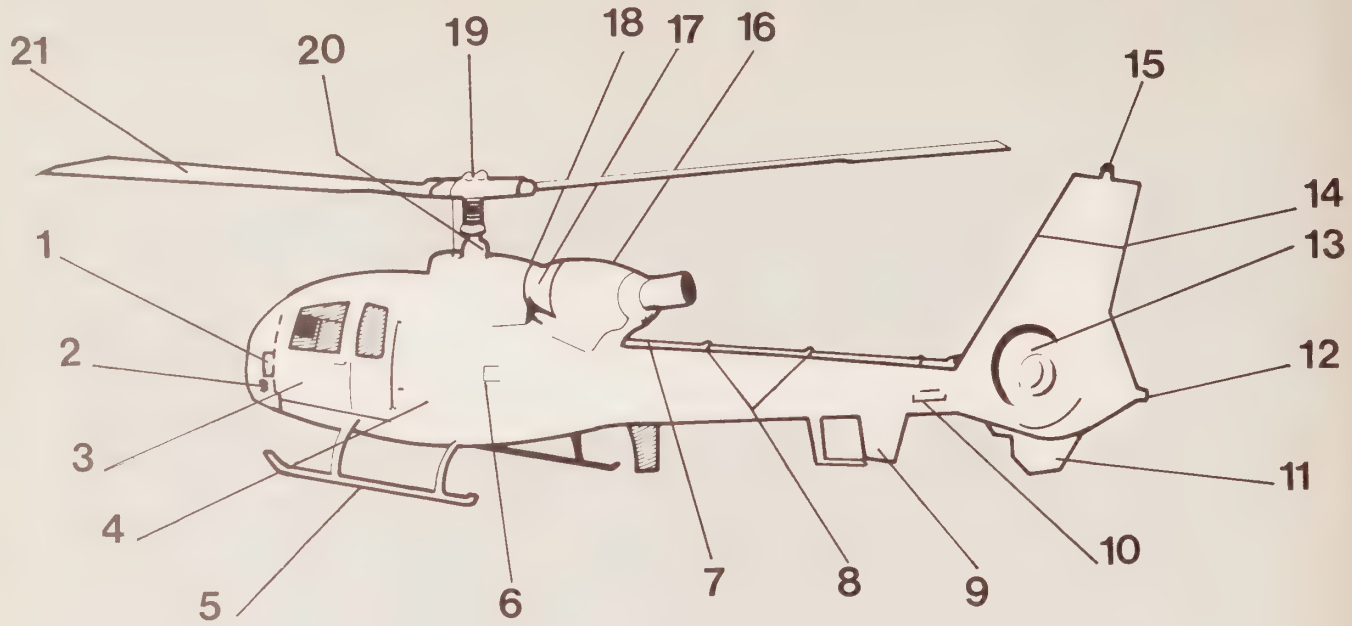
M. Ray Carroll a quitté le Ministère en septembre après 38 ans de service à la Division de la gestion des documents.

Ray Carroll retired from the Ministry in September after 38 years in the Records Management Division.



Miss Dora Christie receiving her pin and certificate after 25 years in the Public Service, from the Atlantic Regional Manager Marine Safety, Mr. J. Hornsby. Miss Christie has served in the Saint John, N.B. office of the Marine Safety branch since entering the Government in 1950.

Mlle Dora Christie reçoit son médaillon et son certificat des mains du gérant régional de la Direction de la Sécurité maritime, monsieur J. Hornsby, après avoir passé vingt-cinq ans au service de la Fonction publique. Mlle Christie a travaillé au bureau de la Direction de la Sécurité maritime de St-Jean (N.-B.) depuis son arrivée au gouvernement en 1950.



CENTRE DE BILINGUISME
BILINGUALISM CENTRE

pour vous and me

The Helicopter

L'hélicoptère

1 *TABLEAU DE BORD CENTRAL*
MAIN INSTRUMENT PANEL

2 *AÉRATION DE LA CABINE*
AIR INLET

3 *PORTE D'ACCÈS À LA CABINE*
CABIN ACCESS DOOR

4 *SOUTE À BAGAGES*
CARGO AREA

5 *PATIN D'ATTERRISSAGE*
SKID TYPE LANDING GEAR

6 *RÉSERVOIR D'ESSENCE*
FUEL TANK

7 *ARBRE D'ENTRAÎNEMENT DU ROTOR ARRIÈRE*
TAIL ROTOR DRIVE SHAFT

8 *PALIERS DE L'ARBRE D'ENTRAÎNEMENT*
DRIVE SHAFT BEARINGS

9 *AILETTES*
FINLETS

10 *PLAN FIXE HORIZONTAL*
HORIZONTAL STABILIZER

11 *BÉQUILLE*
TAIL SKID

12 *FEU DE NAVIGATION*
NAVIGATION LIGHT

13 *ROTOR ARRIÈRE*
TAIL ROTOR

14 *PLAN FIXE VERTICAL*
VERTICAL STABILIZER

15 *FEU ANTICOLLISION*
ANTICOLLISION BEACON

16 *TURBO MOTEUR*
TURBO SHAFT ENGINE

17 *ENTRÉE D'AIR DE LA TURBINE*
TURBINE AIR INTAKE

18 *RÉDUCTEUR DE TURBINE*
TURBINE REDUCTION GEAR

19 *PALE DE ROTOR PRINCIPAL*
MAIN ROTOR BLADE

20 *BOÎTE DE TRANSMISSION PRINCIPALE*
MAIN GEARBOX

21 *ENSEMBLE DE TÊTE DE ROTOR*
MAIN ROTOR HEAD

wild birds of transport

oiseau sauvage des transports



THE HEN-PECKED TRAFFIC HAZARD

The Hen-Pecked Traffic Hazard is not an uncommon bird. He can be easily spotted on week-ends or in the midst of rush-hour traffic, dawdling along 10 to 20 miles-per-hour below the posted speed limit. He is always at the head of a long line of Frustrated Honkers who can be identified by their strangulated cries of "MOVEYOUTURKEY" or "AARRRGGHHH" or "% # @ * +". A firm believer in the theory "Slow is Safe", this species invariably sees many accidents in his rear-view mirror, and can be depended upon to perform a variety of quaint and unexpected manoeuvres at the most inappropriate times. His favorite trick is to speed up just as a Frustrated Honker tries to pass him. If encountered on any roadway, avoid if possible and approach with caution . . . and patience.

LE DODO DE LA ROUTE

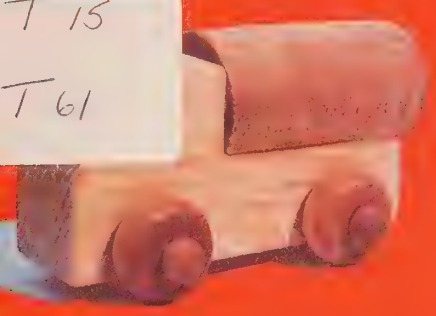
Le dodo de la route n'est pas un oiseau rare. Il est facile à distinguer pendant le week-end ou pendant les heures de circulation intense s'en allant clopin-clopant de 10 à 20 milles à l'heure au-dessous de la vitesse indiquée. Il est toujours à la tête d'une file de "klaxonneurs" frustrés que l'on peut reconnaître par leurs cris étouffés, "AVANCE LAMBIN!" ou "ZZZZZUT" ou encore "% # @ * ¢". Un fidèle adepte de la théorie "Lentement, mais sûrement", cette espèce d'oiseaux voit plusieurs accidents sur son rétroviseur, et soyez certain qu'il exécute des manoeuvres bizarres et inattendues aux moments les plus inopportuns. Sa farce favorite est d'appuyer sur la pédale lorsque le "klaxonneur" frustré essaie de le doubler. Si vous le croisez sur une route, évitez-le si possible et abordez-le avec prudence . . . et patience.



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Christmas Noë

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CONTENTS/SOMMAIRE

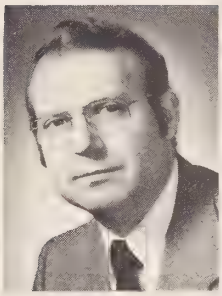
MESSAGES	2 and 3
THE LITTLE SHIP THAT COULD	4
L'INTREPIDE PETITE NAVIRE	7
HANDLE WITH CARE	10
ATTENTION, FRAGILE	12
THE ROMANCE OF THE SEA	15
LE ROMAN DE LA MER	18
TRANSCAN/MINI-REPORTAGES	22



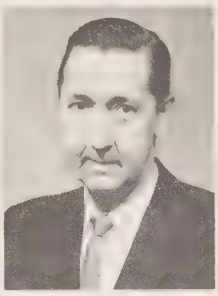
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CONSEIL DES TRANSPORTS


Hon. Otto Lang


Sylvain Cloutier


G.A. Scott

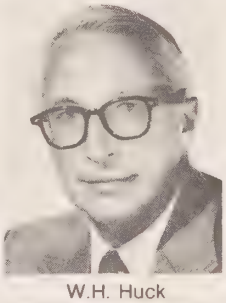

Ralph Goodale


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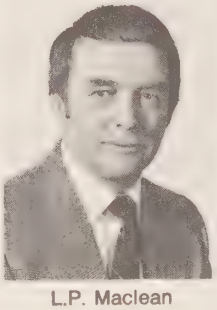

B.A. Pavlov


T.J. Wilkins


M.E. Butler


James Lyon


Del Taylor


L.P. Maclean


Nick G. Mulder

CHISTMAS ME



Otto Lang

I have now been with you in Transport for three months. Let me say at the outset I am thoroughly enjoying my association with the Ministry as a whole and with those of you with whom I have worked closely. I look forward to meeting more of you in the months ahead.

This is a special year for Canadians. As we are all aware, the government is asking for some pretty mature action on the part of all of us. Unless each and every one of us feels the necessity to roll back our expectations in material goods, then each and every one of us will suffer the effects of runaway inflation. We will bear the responsibility.

What must be our minds at this season we can and must make this a warmer, closer time with our families and friends by adding more of ourselves and buying less in the way of material goods.

Not only can we all do this, we can all profit from it.

With this thought in mind, knowing each of us is doing the same thing, I wish you joy and happiness and most important of all, peace.

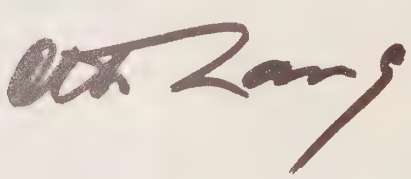
Je suis avec vous aux Transports depuis maintenant trois mois et je dois vous avouer que je prends plaisir à travailler au Ministère et plus particulièrement avec ceux d'entre vous que j'ai déjà rencontrés. Je suis impatient de faire la connaissance de bien d'autres parmi vous dans les mois à venir.

Cette année est une année spéciale pour les Canadiens. En effet, nous savons tous que le gouvernement demande que nous fassions preuve de maturité. A moins que nous soyons tous conscients du besoin de refréner nos appétits, nous devrons tous subir les effets d'une inflation galopante dont nous devrons assumer la responsabilité.

Animés d'un tel esprit à cette époque de l'année, nous pouvons et nous devons rendre plus chaleureux et plus unis nos rapports avec nos familles et amis en donnant plus de nous-mêmes et moins de biens matériels.

Nous en serons tous enrichis sur le plan humain.

C'est dans cet esprit, fort de l'appui de chacun, que je vous adresse mes voeux de bonheur, de joie et par-dessus tout de paix.



AGE DE NOËL



Sylvain Cloutier

Our great festive season is upon us again, giving me my first opportunity to express to you all my good wishes for this happy occasion.

Thanks are due to every one of you in our Transport family for your loyalty and diligence throughout the year, without which our considerable progress would have been impossible. We face a challenging year in which much will depend on the dynamic spirit that animates the Ministry.

I look forward with pleasure to the opportunity of working with you all to improve the Canadian standard of living through our programs.

To all of you and your families, particularly to those of you who will be supporting our operations by working during the holidays, I express the traditional, and sincere, wishes for a Merry Christmas.

C'est de nouveau la période des Fêtes qui est de retour, ce qui pour la première fois me donne l'occasion de vous transmettre mes meilleurs voeux.

Je tiens à remercier chacun de vous qui êtes membre de notre famille des Transports pour votre appui au cours de l'année qui s'achève. Les résultats obtenus témoignent de l'ardeur que vous avez mis au travail et les défis auxquels nous ferons face en 1976 ne sauront être relevés sans le dynamisme qui, grâce à vous, anime le ministère des Transports.

J'anticipe avec plaisir les occasions de travailler avec vous tous à de grands projets pour améliorer le niveau de vie dans notre pays.

À vous tous et à vos familles, et peut-être plus particulièrement à tous ceux qui seront en fonction les jours de Fête, je souhaite un Joyeux Noël ainsi qu'une Bonne et Heureuse Année.





Full steam ahead in Arctic waters. The Skidegate will be used as a Coast Guard training vessel.
A pleine vitesse dans les eaux de l'Arctique. Le SKIDEGATE sera utilisé comme navire d'entrainement de la Garde côtière.

The Little Ship that COULD

by Serge Theoret
Instructor
Canadian Coast Guard College
Sydney, N.S.

Six Coast Guard cadets sailed the legendary Northwest Passage this summer in the CCGS Skidegate, an 87-foot (26.5 metres) buoy tender. They were members of the 11-person crew under Capt. Peter Kalis. The Skidegate, for several years a lighthouse and buoy tender in the Mackenzie River Delta, was to be delivered from Tuktoyaktuk, N.W.T., to Sydney, N.S. as a training vessel.

The following article was written by Serge Theoret, first mate on the voyage, and currently navigation instructor at the Coast Guard College, Sydney.

We had a look at the *Skidegate* from the air before landing at Tuktoyaktuk airstrip and, frankly, we weren't too impressed. She was listing to port and we could see a lot of rust. But we had come here to put her back in operation, and were eager to get on with the job.

We chipped, painted and cleaned for two weeks and then moved aboard. Capt. Peter Kalis arrived soon after while we were overhauling the two diesel engines. On August 8 we steamed out of Tuktoyaktuk Harbour, 12 of us aboard the buoy tender.

We sailed 140 miles west to pick up fuel from CCGS *Camsell*, undergoing repairs near Herschel Island.

After refuelling from the icebreaker we moved closer to shore and tied up alongside the Environment Canada vessel, *Pandor II* to await sailing orders.

The original plan was to sail around Alaska and through the Panama Canal, which is usually the most promising route, considering Arctic ice and weather conditions. But this had been a bad year for ice, maybe the worst ever, and the north coast of Alaska was solidly locked in. Our one hope was



The crew had repainted the vessel, inside and out.
L'équipage avait repeint l'intérieur et l'extérieur du navire.



Capt. Peter Kalis on duty in the wheel house.
Le Capitaine Peter Kalis en devoir à la cabine de pilotage.

to the east; otherwise we would have to return to Tuktoyaktuk and abandon the *Skidegate* for the winter.

Orders came from Ottawa the next morning. Ice conditions in the eastern Arctic had improved and we were to proceed to Sydney with stops at Cambridge Bay and Spence Bay. Instead of heading west we headed east.

We reached Cambridge Bay in five days, after detouring around a big ice field. Then we waited two days for CCGS *Camsell*, refuelled, and sailed for Spence Bay. There was no ice on this section, but navigation was most difficult due to uncharted shoals, reefs and islets.

On August 21 we anchored at Spence Bay, picked up our mail, and received orders to proceed immediately to Sydney. The word was that conditions in Peel Sound and Bellot Strait were good, but could change in a matter of hours. We were told to get through as quickly as possible.

We were in moving ice all the way to Bellot Strait. Navigation wasn't too difficult, but the officer cadets at the wheel had to use a good deal of skill to steer the ship around ice floes.

We encountered the worst conditions of the entire voyage at the entrance to Bellot Strait. A sheet of floating ice — blue ice, six feet deep — was moving into the mouth of the strait and threatened to close it off like a cork in the neck of a bottle. Captain Kalis brought the *Skidegate* along the periphery of the ice until he found a narrow channel close to the shore. We nosed ahead at two knots, pushing through the ice. Two hours

later, we were through the strait, once again in open water.

We were just in time. A weather plane radioed later in the day that the channel had frozen solid behind us.

The morning of August 28, we tied up alongside CCGS *Norman McLeod Rogers* at Resolution Island. Due to a northwesterly swell and little shelter offered at Resolution Island, our refuelling had to be carried out rapidly. Then we sailed on the final leg to Sydney. Fortunately, fine weather was experienced all the way along the Labrador Coast to Belle Isle Strait. On the last leg from Cape Rae to Sydney, the roughest weather during the voyage was encountered, but the *Skidegate* pressed on without losing speed, and tied up at 1830 alongside the training ship CGSS *MIKULA* in Sydney. We had sailed the Northwest Passage, covering a distance of 3,883.5 miles (6,250 km) in 394 hours.



Second Engineer Marc Cimon monitors the two 340 horse power diesel engines.
L'Officier en second, M. Marc Cimon, procède à la vérification des deux moteurs Diesel de 340 chevaux-vapeur.



When the Skidegate anchored at Spence Bay, the school children were given a special assignment: draw pictures of the ship. Here the children display their drawings for Captain Kalis' camera.
Lorsque le SKIDEGATE a jeté l'ancre à la Spence Bay, les écoliers se sont vus assigner un travail spécial, celui de dessiner le navire. On voit ici les enfants qui exposent leurs dessins devant la caméra du capitaine Kalis.



An iceberg off Clyde Inlet.
Iceberg près de Clyde Inlet.

L'Intrépide Petit Navire

par Serge Théoret
Professeur
Collège de la Garde côtière canadienne
Sydney (Nouvelle-Écosse)

Six cadets de la Garde côtière ont traversé le légendaire passage du Nord-ouest cet été à bord du SKIDEGATE, baliseur de 87 pieds (26.5 mètres). Ils faisaient partie d'un équipage de 11 membres sous le commandement du capitaine Peter Kalis. Le SKIDEGATE qui avait fait fonction de phare et de baliseur dans le Delta du Mackenzie depuis plusieurs années, devait être amené à Sydney (N.-É.) depuis Tuktoyaktuk (T.N.-O.) pour y devenir vaisseau-école.

L'article qui suit est de Serge Théoret, premier officier du voyage et professeur au Collège de la Garde côtière de Sydney.

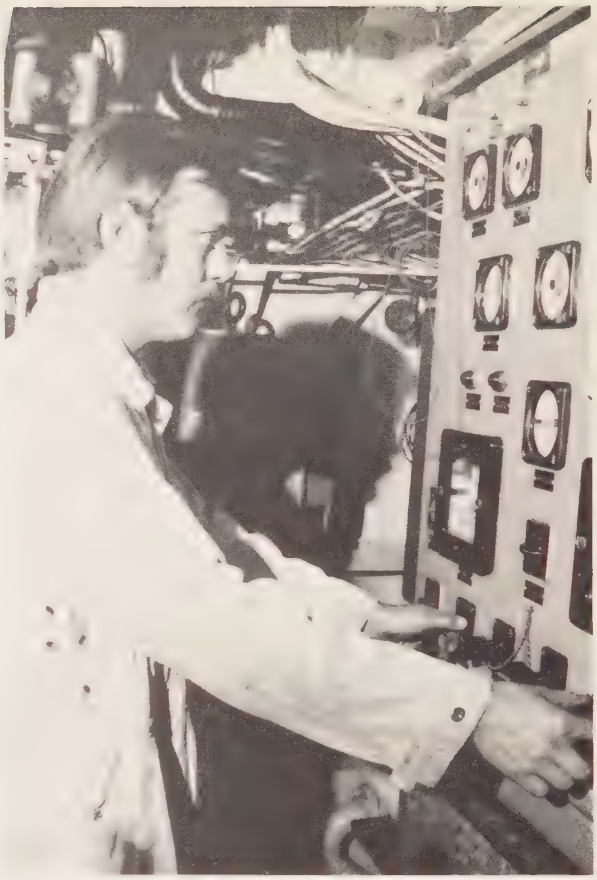
Nous avons aperçu le SKIDEGATE, dont l'aspect ne nous a guère impressionné, avant d'atterrir à l'aéroport de Tuktoyaktuk. Il donnait de la bande à bâbord, laissant voir beaucoup de rouille. Mais nous étions venus ici pour le remettre en état et il nous tardait de nous mettre à l'oeuvre.

Pendant deux semaines nous l'avons gratté, peint et nettoyé après quoi nous nous sommes installés à bord. Le capitaine Peter Kalis est arrivé peu après, alors que nous remettions en état les deux moteurs diesel. Nous étions 12 à quitter le port de Tuktoyaktuk le 8 août.

Nous avons navigué 140 milles vers l'Ouest afin de nous approvisionner en essence à même le CAMSELL, ce dernier subissant des réparations près de l'Île Herschel.

Après avoir fait le plein à même le brise-glaces, nous nous sommes approchés du rivage et nous sommes amarrés près du PANDOR II, propriété d'Environnement Canada, pour y attendre nos instructions.

Nous devions d'abord contourner l'Alaska et traverser le canal de Panama. C'est normalement la meilleure route, compte tenu de la glace de l'Arctique et des conditions atmosphériques. Mais c'était une mauvaise année, peut-être la pire de mémoire d'homme, et la côte nord de l'Alaska présentait une barrière de glace. Notre seul espoir était vers l'Est, faute de quoi il nous aurait fallu retourner à Tuktoyaktuk et y abandonner le SKIDEGATE pour l'hiver.



Chief Engineer Parkes is an instructor at the Coast Guard College in Sydney.
Le chef ingénieur Parkes est instructeur au Collège de la flotte de la Garde cotière à Sydney (N.-E.)



Safely home in Sydney, the Skidegate secured alongside the Mikula. Says Captain Kalis, "A little ship, but a great ship."
A Sydney sain et sauf, le SKIDEGATE amarré à côté du Mikula. De dire le capitaine Kalis, "Un petit navire, mais quel navire!"

Le lendemain matin, nous recevions des ordres d'Ottawa. Les conditions s'étaient améliorées dans l'est de l'Arctique et nous devions nous diriger vers Sydney avec escales à Cambridge Bay et à Spence Bay. Plutôt que de nous diriger vers l'ouest, nous gagnions l'est.

Cinq jours plus tard, nous atteignions Cambridge Bay après avoir contourné une immense nappe de glace. Là, nous avons attendu le Camsell pendant deux jours, refait le plein et sommes repartis vers Spence Bay. Il n'y avait pas de glace dans cette zone mais la navigation y était fort difficile en raison des haut-fonds, des récifs et des îlots que les cartes n'indiquaient pas.

Le 21 août nous avons jeté l'ancre à Spence Bay, pris notre courrier et reçu l'ordre de partir immédiatement pour Sydney. Il semblait que les conditions atmosphériques de Peel Sound et du détroit de Bellot étaient bonnes bien que susceptibles de changer rapidement. On nous dit de faire la traversée aussi vite que possible.

Tout au long du parcours qui nous a mené au détroit de Bellot, nous avancions dans la glace



Ice in the entrance to Bellot Strait. Fortunately Captain Kalis found a channel around the ice.
Glace à l'entrée du détroit de Bellot. Le capitaine Kalis trouve heureusement un chenal à la périphérie de la glace.

flottante. La navigation était assez facile mais les officiers cadets au gouvernail ont dû faire preuve de beaucoup d'habileté pour contourner les banquises.

À l'entrée du détroit de Bellot, nous nous sommes heurtés aux pires conditions de tout le voyage. Une nappe de glace flottante, bleue, d'une épaisseur de six pieds, se déplaçait à l'embouchure du détroit et risquait de le bloquer à la manière d'un bouchon dans le goulot d'une bouteille. Le capitaine Kalis a dirigé le SKIDEGATE au bord de la glace jusqu'à ce qu'il trouve un étroit chenal près de la rive. Nous avancions laborieusement dans la glace flottante à deux noeuds à l'heure. Deux heures plus tard, nous avions eu raison du détroit et reprenions de nouveau l'eau libre de glace.

Ce n'était pas trop tôt. Un avion météorologique annonçait plus tard que le chenal s'était refermé derrière nous, complètement gelé.

Au matin du 28 août, nous amarrions à côté du NORMAN MCLEOD ROGERS à l'île Résolution. Nous avons dû faire le plein en toute vitesse en raison d'une forte houle venant du Nord-Ouest et du peu de protection que nous offrait l'île. De là, en route pour la dernière étape de notre voyage vers Sydney! Heureusement, il a fait très beau tout au long de notre parcours de la côte du Labrador jusqu'au détroit de Belle-Isle. Entre le cap Ray et Sydney nous avons eu le plus gros temps du voyage, mais le SKIDEGATE allait son chemin sans perdre de vitesse et à 18h30 nous amarrions à côté du navire-école MIKULA, à Sydney. Nous avions traversé le passage du Nord-Ouest, parcouru 3,883.5 milles, en 394 heures.



HANDLE WITH CARE

by Mary Woodbury
Public Affairs Officer
Ministry of Transport

As transportation continues to grow in volume and complexity, the Ministry of Transport is tackling the increasing problem of moving dangerous goods – by air, by sea, by rail and by road.

The wide range of problems inherent in transporting dangerous goods was first dealt with on a broad scale by an interdepartmental policy council under the chairmanship of MOT's Bureau of International and Environmental Affairs. The council recommended that a permanent secretariat be set up, housed administratively with MOT. Established in 1974, the Transport of Dangerous Goods Secretariat's first task was to help develop a consultative mechanism for all the regulatory agencies concerned. That accomplished, the Secretariat began to draft regulations that eventually will be published as a national multimodal code to support Canada's international activities and negotiations in this field.

Organizing a united front is no simple task. MOT regulates marine and air carriers, the Canadian Transport Commission regulates rail carriers, and motor carriers are about to be regulated jointly by MOT and provincial agencies. Direct and indirect regulations are also issued by the federal departments of Labour; Environment; Agriculture; Energy, Mines and Resources (EMR); Consumer and Corporate Affairs, and the Atomic Energy Control Board. A shipper of dangerous goods may very well be faced with an array of regulations. A particular substance may have to be packaged as a "dangerous commodity" for rail transport, and

according to a second set of specifications as a "restricted article" for air transport. Can the shipper pack it to suit both, or must he send it in contravention of one of the regulations? Uniting these regulations into one code will alleviate such dilemmas.

Past Efforts

The first efforts to regulate the movement of dangerous goods occurred in the rail and marine modes. Canadian railway regulations were set up in the 1920's in line with the United States' code, which in turn was based on American Association of Railroads standards. Marine regulations stemmed from regulations governing explosives and other war materials.

Air transport guidelines were developed by the International Air Transport Association, an organization of carriers. Few federal or provincial regulations affect the trucking industry, which follows a number of industrial codes.

In 1973 significant Canadian input into the Intergovernmental Marine Consultative Organization Code, and Canada's activity in the UN's Economic and Social Council led to this country's membership in the UN Committee of Experts on the Transportation of Dangerous Goods.

It became clear to the Ministry that if Canada was to have a role to play in this UN committee we would have to integrate and coordinate Canadian activities.

How the Secretariat Functions

The executive committee of the Interdepartmental Policy Council gives guidance to the Secretariat, which establishes working groups on particular subject areas. At present there are eight working groups, led by the Secretariat or agencies having particular expertise. One group, for example, deals with radioactive materials, and is led by an officer of the Atomic Energy Council Board. Another, dealing with etiological agents (mainly infectious medical materials) is led by National Health and Welfare. Each of the regulatory agencies contributes and participates in the working groups, and industry representatives are being drawn into the discussions.

Industry is the prime source of practical advice. For instance, the question was recently asked – What are the viscous properties of inflammable paints? There is a move afoot internationally to introduce the characteristic of viscosity into the criteria for the classification of inflammable liquids: viscous liquids not being as risky in transportation as non-viscous substances. The advice of industry in this area is crucial.

A wealth of technical advice is available within government. For example, EMR's explosives laboratory has a high competence with respect to explosives and inflammable materials. Its metallurgical section can advise on the design and testing of metal containers. In addition, the National Research Council offers superior physical, chemical and engineering skills.

Packaging for Safety

Atomic Energy of Canada Ltd. has led the way in packaging for safety. Costly packages for radioactive materials virtually eliminate the chance of radiation leakage. This is in recognition of the extreme public health danger of radiation, and to a lesser extent the value of the products being shipped. The same level of package integrity could be demanded for industrial chemicals, but it might result in a $100 package for $10 in material. In other words, extremely safe packaging might prohibit the movement of goods. This question of public safety and the demands of commerce is being analyzed.

According to estimates, more than 250,000 products have dangerous properties, although few of these are transported in significant quantities. Some 2,500 products are named specifically in the regulations and the remainder may be transported and regulated as "not otherwise specified" items.

Enforcement

The question of enforcement is under review. Until now, enforcement has been fragmented among modes, the carriers being responsible for meeting standards. In this day of intermodal transportation, greater emphasis will be placed on intermodal standards, and on the responsibility of shippers. If a rail carrier, a motor carrier and a marine carrier all find problems with packages from a particular manufacturer, a coordinated enforcement approach to the shipper could be most effective. This problem is being examined by a working group of the Secretariat.

Dangerous goods-related accidents are not necessarily catastrophies. For example, a fibreboard box of corrosive powder, damaged in shipment, seriously burns a dock worker's hand. Minor accidents are those in which only a few suffer from loss of work or disability. The future safety of packers, carriers, passengers and innocent bystanders depends on the research and regulations produced by the Transport of Dangerous Goods Secretariat and the contributing regulatory agencies. This task they will handle with care.



ATTENTION, FRAGILE

par Mary Woodbury
Agent aux Affaires publiques
Transports Canada

À mesure que s'accroissent le volume, la complexité et l'efficacité des transports, Transports Canada s'attache aux problèmes grandissant des marchandises dangereuses et des précautions qu'elles exigent.

Le nombre d'accidents de transport est relativement peu élevé, si l'on considère le volume de marchandises transportées. Bien sûr, il y a des accidents spectaculaires: déraillement de wagons de propane qui explosent, détruisant un village dans un autre pays; des produits chimiques non convenablement transportés se renversent dans le système d'eau entraînant une pollution sérieuse. Il y a, en plus des accidents spectaculaires, plusieurs milliers d'accidents mineurs, cause de souffrances considérables et de pertes de productivité dans les transports.

La question des marchandises dangereuses a été d'abord étudiée sur une grande échelle par un Conseil politique interministériel sous la présidence du Bureau des Affaires internationales et de l'environnement. Le Conseil a recommandé la

création d'un secrétariat permanent, dont l'administration serait logée au sein du Ministère. Le secrétariat du transport de marchandises dangereuses fut mis sur pied en 1974 et sa première tâche fut d'aider à établir un organisme consultatif aux travaux duquel tous les organismes de réglementation participeraient. Cette tâche accomplie, le secrétariat a commencé à rédiger et à faire concorder les règlements qui seront publiés sous la forme d'un code national multimodal, à soutenir les activités et les négociations internationales du Canada et à tenir lieu de forum pour les organismes de réglementation.

L'unification n'est pas une tâche facile. Le transport aérien et le transport maritime sont régis par le MdT, le transport ferroviaire est régi par la Commission canadienne des transports et le transport routier devrait bientôt être régi à la fois par le MdT et par des organismes provinciaux. Des règlements directs ou indirects sont promulgués par les ministères fédéraux du Travail, de l'Environnement, de l'Agriculture, de l'Énergie, des Mines et des Ressources, de la Consommation et des Corporations, et par la Commission de contrôle de l'énergie atomique. Le transporteur d'une marchandise dangereuse se retrouve donc avec toute une liste de règlements. Une matière particulière peut donc devoir être emballée comme une "marchandise dangereuse" pour le transport ferroviaire et, selon d'autres normes, comme "article réglementé" pour le transport aérien. L'expéditeur peut-il l'emballer de façon à satisfaire aux deux réglementations ou doit-il l'envoyer en enfreignant l'une des deux? La fusion des règlements en un seul code évitera de tels dilemmes.

Tentatives antérieures

Les premières tentatives de réglementation du transport des marchandises dangereuses ont été faites dans le domaine des transports ferroviaire et maritime. La réglementation ferroviaire canadienne a été établie dans les années 1920, d'après le code des États-Unis lui-même basé sur les normes de l'Association américaine des Chemins de fer. La réglementation maritime s'est inspirée de la réglementation concernant les explosifs et autres matériels de guerre.

Les grandes lignes pour le transport aérien ont été élaborées par l'Association internationale du transport aérien, une organisation de compagnies de transport. Peu de règlements fédéraux et provinciaux concernent le cammionage qui est soumis plutôt à un certain nombre de codes industriels.

En 1973, la participation importante du Canada à la rédaction du code de l'Organisation intergouvernementale consultative de la navigation maritime et les activités du Canada au Conseil social et économique des Nations Unies ont amené le Canada à devenir membre d'un Comité d'experts des Nations Unies sur le transport des marchandises dangereuses.

Il est apparu au Ministère que si le Canada devait jouer un rôle dans ce Comité des Nations Unies, il devrait intégrer et coordonner les activités canadiennes.

Fonctionnement du secrétariat

Le conseil exécutif du Conseil politique interministériel donne des directives au secrétariat qui forme des groupes de travail sur des sujets particuliers. Il y a aujourd'hui huit groupes de travail, dirigés par le secrétariat ou par des organismes spécialisés. Par exemple, un groupe s'occupe de substances radioactives sous la direction d'un fonctionnaire de la Commission de contrôle de l'énergie atomique; celui qui s'occupe d'agents étiologiques, en grande partie des substances médicales infectueuses, est dirigé par le Ministère de la Santé et du Bien-Être. Chacun des organismes de réglementation contribue et participe aux groupes de travail et des représentants du secteur privé sont invités à prendre part aux discussions.

Le secteur privé est une source importante de conseils pratiques; par exemple, on a dernièrement posé la question: Quelles sont les propriétés visqueuses des peintures inflammables? Il y a une tendance internationale à introduire la viscosité parmi les critères de classification n'étant pas aussi dangereux que celui de la non-viscosité. Les avis de l'industrie dans ce domaine sont d'une importance capitale.

Le gouvernement peut lui-même offrir une multitude de renseignements techniques. Par exemple, les responsables du laboratoire d'explosifs du ministère de l'Énergie, des Mines et des Ressources sont très compétents en matière d'explosifs et de matériaux inflammables; de même, la section métallurgique de ce ministère pourrait donner des renseignements intéressants sur la conception et la mise à l'essai des conteneurs en métal. De plus, au Conseil national de Recherche travaillent des personnes compétentes, spécialisées en physique, en chimie et en génie.

Emballage sécuritaire

Énergie atomique du Canada Limitée a ouvert la voie de l'emballage sécuritaire et des emballages coûteux pour des substances radioactives éliminant presqu entièrement les risques de fuite de radiations. Ces mesures sont prises car on

reconnaît que les radiations sont extrêmement dangereuses pour la santé publique, et, d'autre part, la valeur des produits expédiés le justifie. La même étanchéité de l'emballage pourrait être exigée pour les produits chimiques industriels, mais un emballage coûtant $100 pourrait alors couvrir $10 de matériel. En d'autres mots, l'emballage hautement sécuritaire pourrait entraver le transport des marchandises. Aussi, la question des exigences de la sécurité publique et des besoins du commerce fait-elle actuellement l'objet d'analyses.

On évalue à plus de 250,000 le nombre des produits qui ont des propriétés dangereuses, quoique peu soient transportés en quantités importantes. Quelque 2,500 produits figurent expressément dans le règlement et les autres peuvent être transportés et régis comme des articles "non spécifiés".

Application

La question de l'application de la réglementation est remise en question. Jusqu'à maintenant, elle variait selon les modes de transport et c'était aux entreprises de transport de respecter les normes. Avec l'expansion du transport intermodal, on accordera plus d'importance à des normes intermodales et à la responsabilité de l'expéditeur. Si les emballages d'un fabricant donné posent des problèmes pour le transport ferroviaire, routier et maritime, une intervention auprès de l'expéditeur, en vue d'une application coordonnée, pourrait être efficace. Un groupe de travail du secrétariat étudie actuellement ce problème.

Les accidents reliés aux marchandises dangereuses ne provoquent pas toujours des catastrophes sur une grande échelle. Par exemple, le bris d'une boîte de carton-planche contenant de la poudre corrosive, endommagée dans le transport, occasionne de sérieuses brulûres aux mains d'un débardeur. Les accidents mineurs sont ceux qui affectent seulement quelques personnes, qui doivent cesser de travailler ou deviennent infirmes. La sécurité future des emballeurs, des employés des entreprises de transport, des passagers et de toute personne qui pourrait se trouver là dépend de la recherche faite par le Secrétariat sur le transport des marchandises dangereuses et de la réglementation qu'il préparera, ainsi que de la contribution des organismes de réglementaiton, et ils y apporteront toute leur attention.

The Romance of the Sea...



by Charles H. Pratt
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Ministry of Transport

"There we were, scudding up the Northumberland Strait, when we runs smack into a pinnacle of rock off Cape Herschell. Its lucky she was a stout ship – built for those northern waters she was – for she glanced off with hardly a scrape. If we'd've beached, she'd've had it. We was only 900 miles from the North Pole, showing the ruddy flag for Old Laurier, and the only other ship we'd seen was a Yankee whaler over on the west side of Greenland".

So might an ordinary seaman have described the voyage of the S.S. *Neptune*, on charter to the

Canadian Government, in 1903. As Arctic voyages go, it wasn't very exciting. True, it took two years, but no new discoveries were made, no one was lost and no real hardships suffered. Certainly not the sort to make the history books.

But the Voyage of the *Neptune* should have made it into history books, Canadian ones anyway, for it was an historical voyage in every sense of the word.

Great Britain transferred its rights in the Arctic to the fledgling Dominion of Canada in 1880, 13 years after Confederation. However, it was not until 1884, and then only because of pressure from Western farmers who wanted a new outlet for their wheat, rather than any real interest in the far north, that the government gave it any attention.

The Department of Marine sent Lt. Andrew Gordon of the Royal Navy — he was later to become Commander of the Canadian Fishery Protection Fleet — to conduct a three year survey into the possibility of a grain route through the Hudson Bay.

In "84, Gordon chartered the *Neptune* from St. John's and sailed into the Bay, setting up ice observation posts en route. That summer, the *Neptune* reached York Factory on the Nelson River and went up the coast to the mouth of the Churchill River. In dispatches back to Ottawa, Gordon reported that the Churchill would make the most suitable port for any railway terminal, advice which was to be ignored until 1928.

Gordon also concluded that the accommodation on the *Neptune* was "somewhat limited", so for the remaining two years of the survey he arranged to borrow HMS *Alert* from the Royal Navy and the *Neptune* returned to the Newfoundland sealing and whaling fleet.

Was Gordon stretching a point when he described the accommodation on the *Neptune* as "somewhat limited"? After all, she could carry a full boat's crew in the foc'sle and two sealing teams amidships and still have room for a full catch of seal pelts. More than likely it was the stench which pervaded the entire ship which bothered him. Ten years of sealing had left their mark, and the oily malodor may well have offended an officer long used to the cleanliness of a tightly-run navy ship.

In any event, the three-year survey, while it recorded much about the northern coast of Labrador and the shoals and islands of Hudson Strait and the Bay, could hardly be called an Arctic voyage. It didn't even touch the 65th Parallel, let alone the Arctic Circle.

But in 1902, Sir Wilfrid Laurier decided that it was time to establish police posts in the northern territories. The Geological Survey Department also asked to have a look at our northern possessions. So the Government once again chartered the *Neptune*, a ship which had, by then, acquired the reputation of being the strongest and most powerful of the East Coast fleet.

To be sure, Maritime and Yankee whalers, sealers and traders had sailed these northern waters since Baffin's voyage in 1616, and for the most part they still used the charts he published at the end of his voyage. But this was to be Canada's first official voyage, and a two-year one at that. History was being made.

The crew was signed on in the usual manner, duration of voyage at $20 a month and given one month's pay in advance. The wise ones replenished their gear and added a blanket or two in preparation for the projected winter stop-over up north. The less cautious had a final fling ashore and if they needed new togs or blankets, would buy them at sea from the ship's store, at vastly inflated prices.

All hands turned to for coaling, and every sack of the 100 tons loaded had to be carted up the gangway and down into the hold by hand. Next, the stores. Dried beef, salt pork, dried peas and beans, lentils and rice, oats and barley, waxed turnips and dried onions, barrels of pickles, jugs of lime juice and, of course, hardtack. An impressive list, but it foretold of many monotonous meals over the next 20-or-so months.

The officers and passengers would fare a little better, but only until the fresh produce ran out, and that would be in a matter of weeks. The officers and passengers also got better accommodation; they had bunks to themselves. The crew for the most part shared bunks one between two, a space economy justified by the fact that half the crew was always on watch.

The ship was under the command of Capt. Sam Bartlett but the entire expedition was under the control of A.P. Low of Geological Survey.

The *Neptune* sailed out of Halifax in July 1903 and headed up the coast of Labrador. The ship was well equipped with steam boiler and propeller, but, with a prevailing Nor'wester, she could make as good time with foremast, main and mizzen full rigged.

These were familiar waters to the crew and, even though it was summer, storms dominated all their thoughts. At any time the wind could veer and they'd be in the midst of a dreaded northeast gale. Then they'd be called off watch to wrestle, waist deep in water, with wet canvas on straining booms, or cling desperately to the shrouds while

trying to ease stiff rigging through resisting block and tackle.

Into the Hudson Strait and down into the Bay the threat seemed to disappear. The winds were still as strong, and the waves as high, but they no longer blew in, unobstructed, from Iceland as they did out in the Atlantic. They seemed tamer, somehow.

In that first summer the voyage took them along the south coast of Baffin Island and into the bays of Somerset Island. Temporary police posts were set up in some places, but only at Fullerton, on the west side of Hudson Bay, is there still a permanent community as a result of that first voyage.

The *Neptune* wintered at Fullerton. The ship was banked with snow to provide added warmth. Temporary shelters were built on shore to house provisions and scouting parties sent inland to hunt for fresh meat. Any fish caught was either dried for storage or boiled to augment the daily meals.

Seals were plentiful, but the crew, veterans of a great many seal hunts, preferred not to eat them. Seal meat has an odd taste, but those who lived among the Esquimaux have reported that, once you get used to it, it is really delicious. Turn-of-the-century reports told of sealers, stranded on shore ice, almost dying of starvation before being rescued, yet surrounded by the carcasses of the animals they had skinned. Perhaps the dislike was fostered by the fact that the oil-laden carcasses rapidly turned rancid, no matter how cold the weather. Whatever, they preferred salt pork and beans, or tough, stringy bear meat and that's what they got...for the next seven months.

There was a welcome break in the routine on Christmas Day. Although only temporarily a government ship, the crew was given all the traditional rights and privileges of Royal Navy seamen everywhere for the holiday. The youngest seaman became "captain for the day", meting out punishment to wrongdoers, particularly those who had tormented him so far on the voyage, and decreeing that the crew should have the day off while the officers did the work.

The noon meal was a "corker", served to the entire ship's company in the forward hold, decorated for the occasion with signal flags and bunting. The piece-de-resistance was a steaming "spotted dog", a suet pudding for which the cooks had carefully hoarded precious flour, raisins and maple syrup, topped off with a generous issue of Jamaica rum.

Being a Newfoundland ship, there were more than enough "squeeze boxes and fiddles" among the foc'sle hands to make up an impromptu band. Jigs and reels resounded off the stout wooden bulkheads well into the evening. Anywhere else the holiday would have lasted from sunup to sundown, but in these northern latitudes the daylight hours were brief, so the festivities were ordered from eight bells in the forenoon watch to eight bells of the night watch. It must have been a bleary-eyed group that resumed monotonous duty at midnight that day.

With ice break-up in '4, the *Neptune* again headed north, into the Davis Strait and up to Ellesmere Island, following the route of the Parry expedition of 1819. At Cape Herschell, after nearly coming to grief on a submerged rock pinnacle, they built a cairn and raised the flag, claiming the land for His Majesty Edward VII.

Southwards again, into the Lancaster Sound and a look at Devon Island, the first "honest to goodness soil we had seen in weeks". The last 400 miles of shoreline had been glacial — "inhospitable and bleak, presenting such a picture of loneliness and desolation that no one could ever get used to it" — so that the mosses and grass of the Island's southern coast must have been a sight for sore eyes.

They would be sore eyes, too. They had been at the head of Glacier Alley, with chilling fog the rule rather than the exception, visibility near zero, and hundreds of drifting icebergs made of ancient ice which could be harder than iron. Sailing these waters must have been a slow, eye straining process.

But they were soon to be home with the prospects of collecting 18 months back-pay, all $360 of it. They had been within 900 miles of the North Pole and asserted Canada's sovereignty over the Arctic Archipelego. They had made Canadian History.

(The *Neptune* went back into the sealing trade and eventually recorded landing of its millionth pelt at St. John's. It sank in a storm off the East Coast in 1943 after a service of 70 years).

LE ROMAN DE LA MER...



par Charles H. Pratt
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"C'est là qu'on était, cinglant vers le détroit de Northumberland, lorsqu'on donna en plein sur une aiguille rocheuse au large du cap Herschell. Une chance que c'était un bateau solide — construit pour ces eaux du Nord — parce qu'il ne fit que rebondir avec à peine une éraflure. Si ont s'était mis au sec, on y aurait eu droit! On n'était qu'à 900 milles du Pôle Nord, montrant le fichu drapeau pour ce vieux Laurier et le seul autre bateau qu'on a vu, c'était par delà la côte ouest du Groenland, un baleinier Yankee".

C'est ainsi qu'un simple marin aurait pu décrire le voyage du NEPTUNE, affrété par le gouvernement canadien en 1903. Pour un voyage polaire, ce n'était pas très captivant. C'est vrai, il dura deux ans, mais aucune nouvelle découverte ne fut faite, personne ne fut perdu, aucune mésaventure sérieuse n'était arrivée. Ce n'était vraiment pas le genre de voyage dont on fait les livres d'histoires.

Cependant, le voyage du NEPTUNE aurait dû entrer dans l'histoire, pour le moins dans les livres d'histoire canadienne car ce fut un voyage historique dans toute l'acceptation du terme.

La Grande-Bretagne avait transmis ses droits dans l'Arctique au jeune Dominion du Canada en 1880, treize ans après la Confédération. Toutefois, ce ne fut pas avant 1884, et encore le fit-il sous la pression des fermiers de l'Ouest qui cherchaient un nouveau débouché pour leur blé et non pas par intérêt véritable pour le Nord, que le gouvernement y prêta une certaine attention.

Le ministère de la Marine envoya le lieutenant Andrew Gordon de la Royal Navy — plus tard commandant de la flotte de protection des pêcheries canadiennes — prendre la direction d'une expédition de trois ans devant établir la possibilité de tracer une route pour le transport du grain par la baie d'Hudson.

En "84", Gordon affréta le NEPTUNE à Saint-Jean et partit pour la Baie, installant chemin faisant des postes d'observation des glaces. Cet été-là, le NEPTUNE atteignit York Factory sur le Nelson et remonta la côte jusqu'à l'embouchure du Churchill. Dans ses comptes rendus à Ottawa, Gordon signalait que Churchill aurait fait un bon port pour un terminus de chemins de fer. Ce conseil devait rester sans suite jusqu'en 1928.

Dans ses conclusions, Gordon ajoutait que les aménagements du NEPTUNE étaient "quelque peu limités", de sorte que pour les deux dernières années de l'expédition, il s'était arrangé pour emprunter le ALERT à la Royal Navy et le NEPTUNE retourna à la flotte baleinière de Terre-Neuve.

Est-ce que Gordon exagérait lorsqu'il disait que les aménagements du NEPTUNE étaient "quelque peu limités"? Après tout, ce navire pouvait loger tout l'équipage d'un bateau dans le gaillard d'avant, deux équipes de chasseurs de phoques au milieu et avoir encore de la place pour un plein chargement de peaux. Il est certain que ce qui le dérangeait, c'est la pestilence qui imprégnait tout le navire. Dix années de chasse aux phoques avaient laissé leurs traces et l'odeur infecte devait incommoder un officier depuis longtemps habitué à la propreté d'un navire de guerre rigoureusement entretenu.

Quoi qu'il en fût, bien qu'on inscrivit nombre de renseignements sur la côte nord du Labrador, les hauts fonds et les îles du détroit d'Hudson et de la Baie, ce voyage de trois ans pouvait difficilement passer pour une expédition polaire. On ne toucha même pas le 65è parallèle et moins encore le cercle Arctique.

En 1902 cependant, Sir Wilfrid Laurier décida qu'il était temps d'établir des postes de police dans les territoires du Nord; le Bureau des études géologiques demanda lui aussi à jeter un coup d'oeil sur nos possessions septentrionales. C'est ainsi qu'une fois de plus, le gouvernement affréta le NEPTUNE, qui déjà à cette époque, avait acquis la réputation d'être le bateau le plus solide et le plus puissant de toute la flotte de la côte est.

Chose certaine, les baleiniers chasseurs de phoques et commerçants des Maritimes et des É.-U. naviguaient dans ces eaux polaires depuis le voyage de Baffin de 1616 et la plupart utilisaient encore les cartes qu'il avait publiées à son retour. Mais il s'agissait là du premier voyage officiel du Canada, un voyage de deux ans. L'histoire était en marche...

L'équipage fut recruté suivant le procédé habituel: pour la durée du voyage et à raison de $20 par mois, avec un mois d'avance. Les plus sages regarnirent leur fourniment, ajoutèrent une couverture ou deux en prévision de la longue escale hivernale envisagée dans le Nord. Les moins prévoyants s'offrirent une dernière bordée à terre, quittes à se procurer au magasin du bord et à des prix exhorbitants, les nippes et les couvertures dont ils auraient certainement besoin.

On mobilisa toutes les équipes pour charbonner. Chacun des sacs des 100 tonnes embarquées dut être trimballé par la coupée et descendu dans les soutes à bout de bras. Ensuite, les provisions. Du boeuf séché, du porc salé, des pois et des haricots secs, des lentilles et du riz, des flocons d'avoine et de l'orge, des navets et des oignons séchés, des tonnelets de marinades, des cruches de jus de limette et bien sûr du biscuit de mer. C'est une liste impressionnante, mais elle présageait nombre de repas monotones pour une vingtaine de mois...

Passagers et officiers mangeraient un peu mieux, mais seulement tant que les aliments frais ne seraient pas épuisés, ce qui n'était qu'une question de semaine. D'autre part, ils jouissaient d'aménagements plus confortables: ils avaient des couchettes individuelles. Pour la majeure partie de l'équipage, une couchette devait servir à deux hommes, par une économie de place que justifiait le fait que la moitié des hommes était toujours de quart.

Le capitaine Sam Bartlett commandait le navire, mais A.P. Low, de la Recherche géologique, dirigeait toute l'expédition.

Le NEPTUNE quitta Halifax en juillet 1903 et longea les côtes du Labrador. Le navire était bien équipé d'une chaudière à vapeur et d'une hélice, mais avec un vent du Nord-Ouest dominant, il pouvait marcher aussi bien avec ses mât de misaine, grand mât et mât d'artimon, portant toute leur voilure.

Ces eaux étaient bien connues de l'équipage et, bien qu'on fût en été, les tempêtes occupaient toutes ses pensées. À tout moment le vent pouvait tourner et on se serait retrouvé au beau milieu d'une de ces redoutables tempêtes du Nord-Est. Alors, les hommes auraient été rappelés de leur quart pour lutter, dans l'eau jusqu'à la poitrine, avec les voiles mouillées, sur des vergues ruisselantes, ou se cramponnant désespérément aux haubans en essayant de choquer un cordage raidi à travers les moufles d'un palan coincé.

Dans le détroit d'Hudson et plus bas vers la Baie, les craintes semblaient disparaître. Les vents étaient toujours aussi forts et les vagues aussi hautes, mais ils ne soufflaient plus directement de l'Islande, comme au large dans l'Atlantique. Ils paraissaient en quelque sorte domestiqués.

Dans ce premier été, leur voyage les conduisit le long de la côte sud de l'île de Baffin ainsi que dans les baies de l'île Somerset. Des postes de police provisoires furent établis dans certains endroits, mais ce n'est qu'à Fullerton, sur la côte ouest de la baie d'Hudson, qu'il existe encore une agglomération permanente, résultat de ce premier voyage.

Le NEPTUNE hiverna à Fullerton. Pour avoir un

peu plus de chaleur, le navire fut recouvert de neige, des abris provisoires construits à terre pour ranger les vivres et héberger les groupes de reconnaissance envoyés à l'intérieur en quête de gibier. Tout poisson capturé était soit séché pour les provisions, soit bouilli pour améliorer l'ordinaire quotidien.

Les phoques étaient en abondance, mais les matelots, vétérans d'un grand nombre de campagnes de chasse, préféraient ne pas en manger. La chair du phoque a un goût singulier, mais ceux qui [illegible] vécu parmi les Esquimaux ont déclaré qu'une [illegible] que vous y êtes habitué, c'est réellement délicieux. Des rapports du début du siècle ont parlé de chasseurs de phoques, échoués sur des rivages glacés, mourant presque de faim avant d'être secourus, entourés cependant des carcasses d'animaux qu'ils avaient écorchés. Peut-être le dégoût était-il entretenu par le fait que l'huile qui imprégnait les carcasses rancissait rapidement, malgré le froid. Quoi qu'il en soit, ils préféraient le porc salé avec des haricots ou encore de la viande d'ours, coriace et filandreuse; et c'est ce qu'ils mangèrent... pendant les sept mois suivants

Le jour de Noël, la monotonie quotidienne fut joyeusement rompue. Bien que le NEPTUNE ne fût un navire du Gouvernement qu'à titre temporaire, l'équipage reçut pour la Fête tous les droits et privilèges accordés traditionnellement aux marins de la Royal Navy. Le marin le plus jeune fut nommé "capitaine du jour", imposant des punitions aux fautifs, particulièrement à ceux qui l'avaient tourmenté pendant le voyage et décrétant une journée chômée pour l'équipage, alors que les officiers étaient tenus de faire le service.

Le repas du midi fut un festin servi à toute la compagnie dans la cale avant, décorée pour l'occasion de pavillons de signalisation et de draperies. Le plat de résistance était un pouding au suif fumant pour lequel les cuistots avaient jalousement gardé la précieuse farine, du raisin sec et du sirop d'érable, le tout couronné d'une large rasade de rhum de la Jamaïque.

En bons Terre-Neuviens, les matelots du gaillard d'avant fournirent plus d'accordéonistes et de violoneux qu'il n'en fallait pour improviser un petit orchestre, et à travers les épaisses cloisons de bois, les accents de rills et de gigues résonnèrent jusque tard dans la soirée. Partout ailleurs les festivités auraient duré du lever au coucher du soleil, mais sous ces latitudes polaires les heures diurnes sont brèves et c'est pourquoi les réjouissances furent commandées à partir des huit coups de cloche du quart du matin au huit coups du quart du soir. Ce fut certainement une équipe



The Neptune (third from top) is one of four coastal ships used to illustrate a recent series of stamps.
Le NEPTUNE (le troisième du bas) est l'un des quatre navires de la Garde cotière qui apparait sur une récente émission de timbres.

au regard embrumé qui dut, à minuit ce soir-là, reprendre sa tâche monotone.

À la débacle des glaces, en 1904, le NEPTUNE se dirigea encore plus au Nord, dans le détroit de Davis jusqu'à l'île Ellesmere, suivant la route de l'expédition Parry en 1819. Au cap Herschell, après avoir failli s'échouer sur une aiguille rocheuse submergée, l'équipage érigea un cairn et hissa les couleurs pour proclamer sur ces terres la souveraineté de Sa Majesté Edouard VII.

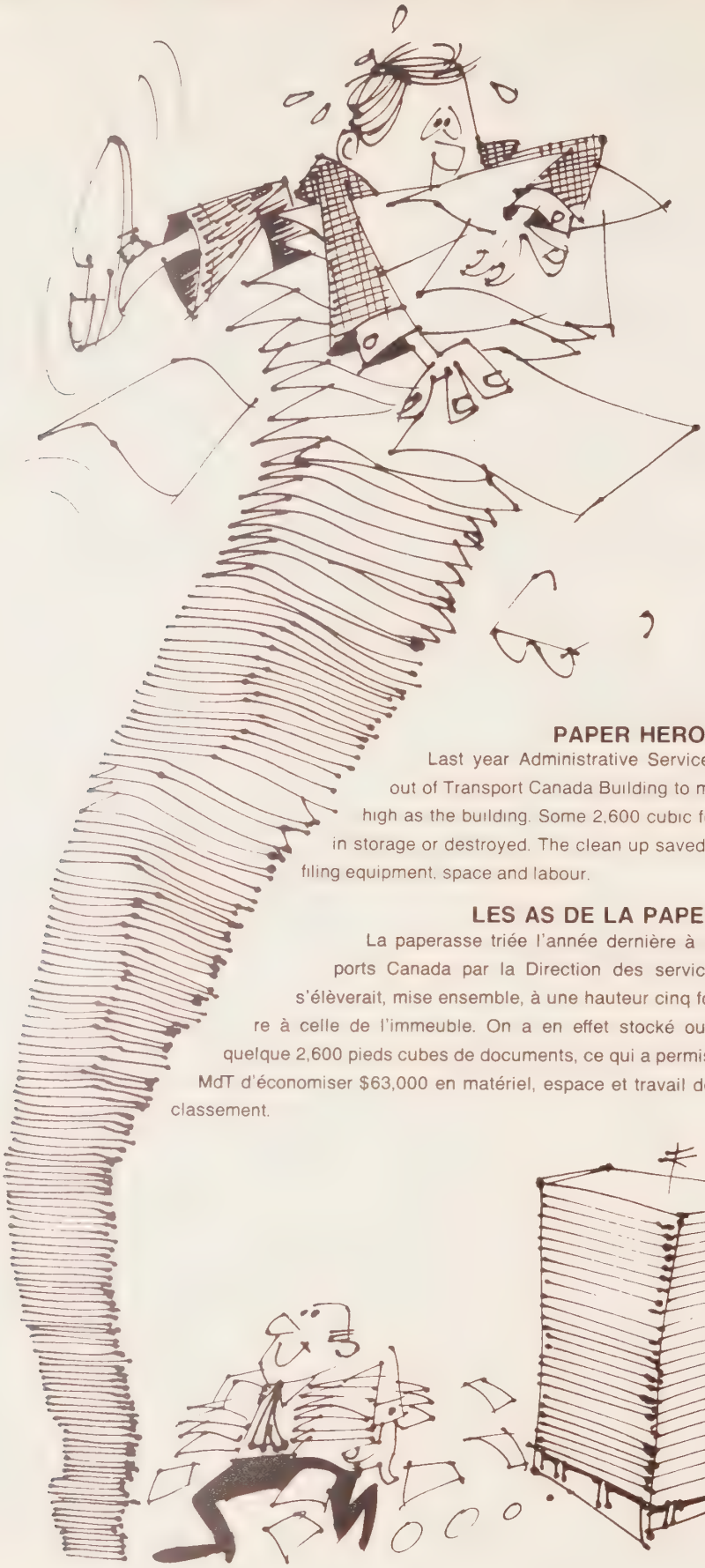
Ils poussèrent vers le Sud à nouveau et dans le détroit de Lancaster jetèrent un regard sur l'île Devon, "la seule vraie terre que nous ayons vue depuis des semaines". Les derniers quatre cent milles de rivage avaient été couverts de glace –

"inhospitaliers et désertiques, offrant un tel spectacle de solitude et de désolation, que personne ne pourrait jamais s'y habituer" — à tel point que les herbes et les mousses de la côte sud de l'île ont dû sembler reposantes pour des yeux fatigués.

Et il y avait de quoi avoir les yeux endoloris. On s'était rendu aux portes du royaume des glaces, dans un brouillard glacé plus coutumier qu'exceptionnel, par visibilité presque nulle, avec des centaines d'icebergs à la dérive, faits d'une glace ancienne et parfois plus dure que du fer. Naviguer dans ces eaux devait être une besogne de longue haleine, éprouvante pour les yeux.

Mais les hommes allaient bientôt rentrer chez-eux, avec la perspective de toucher 18 mois d'arriérage de salaire, en tout 360 dollars. Ils s'étaient trouvés à 900 milles du Pôle Nord et avaient affirmé la souveraineté canadienne sur l'archipel de l'Arctique. Ils avaient écrit une page de l'histoire du Canada.

(Le NEPTUNE retourna à la chasse aux phoques et enregistra en fin de compte, le débarquement à Saint-Jean de sa millionième peau. Il sombra dans une tempête de la côte est en 1943, après 70 ans de service.)



PAPER HEROES

Last year Administrative Services cleared enough paper out of Transport Canada Building to make a pile five times as high as the building. Some 2,600 cubic feet of paper was put in storage or destroyed. The clean up saved MOT $63,000 in filing equipment, space and labour.

LES AS DE LA PAPERASSE

La paperasse triée l'année dernière à l'immeuble Transports Canada par la Direction des services administratifs s'élèverait, mise ensemble, à une hauteur cinq fois supérieure à celle de l'immeuble. On a en effet stocké ou détruit quelque 2,600 pieds cubes de documents, ce qui a permis au MdT d'économiser $63,000 en matériel, espace et travail de classement.

NEW PARLIAMENTARY SECRETARY
NOUVEAU SECRETAIRE PARLEMENTAIRE



Ralph Goodale, Parliamentary Secretary to Transport Minister Otto Lang, is member of parliament for the Saskatchewan riding of Assiniboia. Elected to Parliament in 1974, Mr. Goodale, 26, has served as deputy government whip and vice-chairman of the House of Commons Standing Committee on Agriculture. A lawyer, he was special assistant to Mr. Lang, then Minister of Justice, in 1973-74.

Mr. Goodale was born and raised on the family farm at Wilcox, Sask., attending public and high school in the province. He was named the most outstanding graduate of the College of Law, University of Saskatchewan at Saskatoon in 1972.

M. Ralph Goodale, le nouveau secrétaire parlementaire du ministre des Transports, M. Otto Lang, est député de la circonscription d'Assiniboia en Saskatchewan. Elu en 1974, M. Goodale, âgé de 26 ans, a été chef de file adjoint du gouvernement et vice-président du Comité permanent de l'agriculture à la Chambre des communes. Il a été adjoint spécial de M. Lang alors que celui-ci était ministre de la justice en 1973-74. M. Goodale est avocat.

M. Goodale vient d'une famille de fermiers de Wilcox, (Sask.). Il a fait ses études primaires et secondaires dans cette province. En 1972, il a été nommé l'élève le plus exceptionnel de la faculté de droit de l'université de la Saskatchewan.

Appointments/Nominations

A senior assistant deputy minister and two assistant deputy ministers have recently joined the Ministry of Transport.

David Kirkwood, 51, is the new Senior Assistant Deputy Minister, Planning and Development. Mr. Kirkwood will head the Ministry's task force developing transportation policy initiatives.

Nick G. Mulder, 35, is the new Assistant Deputy Minister, Strategic Planning. Mr. Mulder will head a new group within the Ministry responsible for directing strategic and economic planning and forecasting related to transportation policy.

James Lyon, 41, takes over as Assistant Deputy Minister responsible for dealing with provinces, employers, users and others with a major interest in transportation.

Le ministère des Transports compte de nouveaux sous-ministres adjoints à son service.

M. David Kirkwood, 51 ans, devient le nouveau sous-ministre adjoint principal, Planification et Perfectionnement. M. Kirkwood dirigera le groupe d'étude du Ministère chargé de l'élaboration des politiques gouvernementales en matière de Transport.

M. Nick G. Mulder, 35 ans, devient le nouveau sous-ministre adjoint à la Planification stratégique. M. Mulder dirigera un nouveau groupe chargé de la planification et des prévisions stratégiques et économiques en vue de la mise au point de la politique en matière de transport.

M. James Lyon, devient sous-ministre adjoint responsable des questions relatives à la politique actuelle des transports et à établir des relations avec les provinces, le réseau des transporteurs, les usagers des transports et les autres organismes qui s'intéressent de près aux systèmes de transport.



Prior to joining the Ministry of Transport, Mr. Kirkwood was the Assistant Deputy Minister (Policy) in the Department of National Defence.

Mr. Kirkwood began his public service career in 1945 as a research physicist with the National Research Council at Chalk River, Ont. He was next employed by the Department of Political Economy at the University of Toronto from 1949 to 1950 when he joined the Department of External Affairs to serve in Ottawa and Europe.

Mr. Kirkwood held several positions with the Departments of External Affairs and National Defence until his appointment in 1969 to the Privy Council Office as Assistant Secretary to the Cabinet for Government Operations.

In April 1972, he was appointed Assistant Deputy Minister (Policy) in the Department of National Defence where he later served for five months as acting Deputy Minister in 1974.

Mr. Kirkwood received his Bachelor of Arts (Physics) in 1945 and his Master's degree (Political Science) in 1950 from the University of Toronto.

Avant cette nomination, M. Kirkwood était sous-ministre adjoint (politiques) au ministère de la Défense nationale.

M. Kirkwood est entré à la Fonction publique en 1945 à titre de chercheur en physique au Conseil national de recherches du Canada à Chalk River (Ont). En 1949 et 1950, il enseigna au département d'Economie politique de l'université de Toronto et entra au ministère des Affaires extérieures où il occupa différents postes à Ottawa et en Europe.

M. Kirkwood fut titulaire de plusieurs postes au sein des ministères des Affaires extérieures et de la Défense nationale jusqu'à sa nomination en 1969 au bureau de Conseil privé au poste de Secrétaire adjoint du Cabinet (opérations gouvernementales).

En avril 1972, il fut nommé sous-ministre adjoint (politiques) au ministère de la Défense nationale, où il fut pendant cinq mois, en 1974, sous-ministre intérimaire.

M. Kirkwood a obtenu son baccalauréat ès Arts (physique) en 1945 et une maîtrise (économie politique) en 1950 à l'université de Toronto.



Mr. Mulder is a former Director General, Analysis and Liaison Branch, Department of Regional Economic Expansion in Ottawa.

Born in the Netherlands, Mr. Mulder came to Canada in 1955. He received his MA in Economics from the University of New Brunswick in 1965. Prior to joining DREE in 1971 as Director of Plan Formulation, he was for three years Economic Advisor to the Government of New Brunswick.

M. Mulder qui occupait précédemment le poste de directeur général de l'Analyse et de la Liaison au ministère de l'Expansion économique régionale à Ottawa, est entré en fonction le 15 septembre.

Né aux Pays-Bas, M. Mulder a émigré au Canada en 1955. Il a obtenu sa maîtrise en économie à l'Université du Nouveau-Brunswick en 1965. Avant d'être engagé par l'EER en 1971 comme directeur de l'Elaboration des plans, il a travaillé pendant trois ans comme conseiller économique pour le gouvernement du Nouveau-Brunswick.

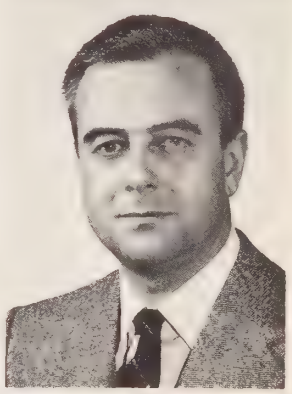
Mr. Lyon has extensive experience at the national and international level in the fields of banking, law, manufacturing and transportation.

He was an Assistant Solicitor with Air Canada in 1965 and, later, legal advisor to Canadair Limited in Montreal. In 1970, Mr. Lyon headed the overseas department of a bank located in Bermuda.

Mr. Lyon joined the Department of Justice in 1972 and was attached to the Finance and Treasury Board where his role involved liaison with MOT, Canadian National Railways and Air Canada. In 1973, he was appointed as Director, Legal Services in the Department of Energy, Mines and Resources.

Mr. Lyon comes to Transport Canada from his position as Director of Commercial Law in the Department of Justice.

Mr. Lyon holds an M.A. from the University of Glasgow, an LL.B. from the University of St. Andrews and an LL.M. from McGill University.



M. Lyon possède une vaste expérience, tant nationale qu'internationale, dans les domaines des opérations bancaires, du droit, de la fabrication industrielle et des transports.

En 1965, il devint solliciteur adjoint à la compagnie Air Canada et par la suite, fut nommé conseiller juridique à la compagnie Canadair Limitée de Montréal. En 1970, il a dirigé un service bancaire outre-mer situé aux Bermudes.

En 1972, il a accepté un poste au ministère de la Justice avec les Finances et le Conseil du Trésor, où ses fonctions comprenaient la liaison avec Transports Canada ainsi qu'avec les Chemins de fer nationaux du Canada et Air Canada. En 1973, il fut nommé Directeur du Contentieux au ministère de l'Energie, des Mines et des Ressources.

Avant cette nomination à Transports Canada, M. Lyon était Directeur du droit commercial, au ministère de la Justice.

M. Lyon est titulaire d'une maîtrise ès arts de l'Université de Glasgow et il est diplômé en droit des universités St. Andrews et McGill.

Scholarships / Bourses d'études

Six sons and daughters of Ministry of Transport employees have won $500 scholarships from a fund supported by donations by MOT employees. The scholarships were awarded to first year college students selected by the Association of Universities and Colleges. The winners are:

Six fils et filles d'employés du ministère des Transports ont gagné des bourses d'études de $500 venant d'un fonds constitué par les dons des employés du Ministère. Les bourses ont été accordées à des étudiants de première année du cours supérieur choisis par l'Association des Collèges et Universités. Les gagnants sont:



Kenneth Blackburn, Queen's University, son of J.K. Blackburn, communications requirements officer, Air Traffic Services, Ottawa.

Kenneth Blackburn, Université Queen, fils de J.K. Blackburn, surveillant, Besoins en communications, Services de la circulation aérienne, Ottawa.



Charlaine Boyd, Queen's University, daughter of C.W. Boyd, maintenance foreman, Sydney Airport, Sydney, N.S.

Charlaine Boyd, Université Queen, fille de C.W. Boyd, surveillant de l'entretien, Aéroport de Sydney, Sydney (N.-É.)



Nancy Campbell, University of Guelph, daughter of G.D. Campbell, director, Road and Motor Vehicle Safety Branch, Ottawa.

Nancy Campbell, Université de Guelph, fille de G.T. Campbell, Directeur Sécurité automobile et routière, Ottawa.



Kathryn Cutler, University of Victoria, daughter of D.B. Cutler, an electrical technician at Victoria, B.C.

Kathryn Cutler, Université de Victoria, fille de D.B. Cutler, technicien en électricité à Victoria (C.-B.)



Elizabeth Jacob, Acadia University, daughter of Richard Jacob, electronics technician, Telecommunications and Electronics Branch, Halifax.

Elizabeth Jacob, Université Acadia, fille de Richard Jacob, technicien en électronique, Direction des télécommunications et de l'électronique, Halifax.



Beverley Terriff, University of Alberta, daughter of T.P. Terriff, supervisor, Air Traffic Control, Calgary.

Beverley Terriff, Université de l'Alberta, fille de T.P. Terriff, surveillant, Contrôle de la circulation aérienne, Calgary.



The ATC machine, at right, is leading by half a length in the first race.
Le "véhicule" du service de contrôle du trafic aérien devance dans le première course.

Soapbox Derby Without Soap - Just a Bathtub

Air Traffic Control staff at Grande Prairie, Alta., puffed their way to glory in late summer at the dryland bathtub races held in conjunction with the community's "Muskoseepee Days".

Some 15 tubs competed in the annual event, held this year on dry land because of a lowered reservoir.

The object of the race was to push a bathtub on wheels a quarter of a mile uphill, do a U turn, get into the tub, and roar to the finish line.

ATC's green, tricycle-geared tub was constructed with more determination than know-how, according to reports from Grande Prairie. Dave George, the boss, was the heaviest, and for his own safety felt he should do the welding. Al Richey greased the wheels and acted as general trouble shooter during pre-race testing. Scott Olson was given the task of painting. The remaining staff was used to provide horsepower.

Some 15 tubs were rolled out for the races, the first of which was a clear win for the ATC crew. In all, their rig captured three firsts and two seconds.

Sus aux Baignoires

L'été dernier, le personnel du Contrôle de la circulation aérienne de Grande Prairie (Alberta) a fait des pieds et des mains pour trouver la gloire dans les courses de baignoires sur la terre ferme tenues à l'occasion de la "Fête de Muskoseepee".

Il manquait d'eau dans le réservoir municipal, la course a donc eu lieu sur la terre ferme, et une quinzaine de baignoires ont pris le départ.

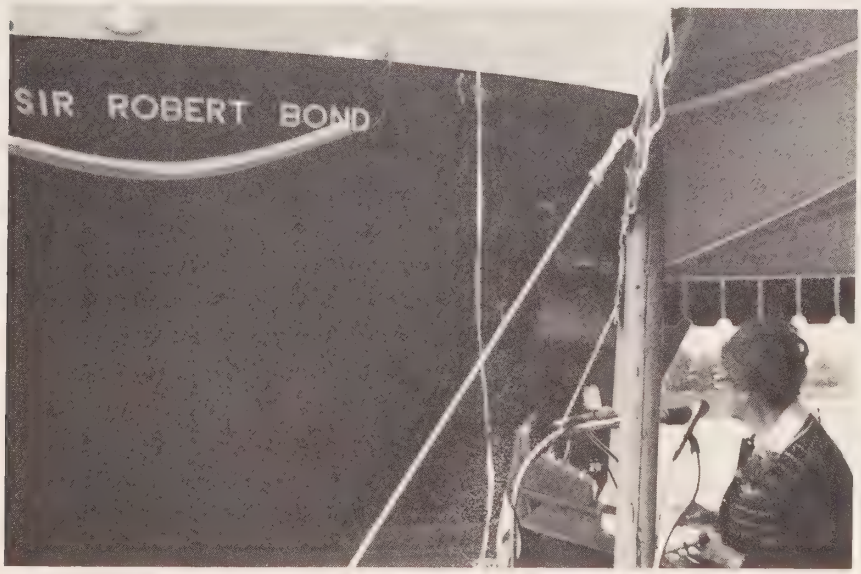
Dans la course de cette année, il fallait pousser une baignoire montée sur roues en haut d'une pente d'un quart de mille, faire demi-tour, plonger dans la baignoire et foncer jusqu'à la ligne d'arrivée.

La baignoire gagnante, peinte en vert, a trois roues et elle a été construite avec plus de détermination que de savoir-faire, selon les rapports que l'on a reçus de Grande Prairie. Dave George, le patron, était le plus lourd: il a donc décidé qu'il vallait mieux, pour sa propre sécurité, qu'il fasse lui-même la soudure. Al Richey a graissé les roues, et il a servi de mécanicien pendant les essais avant la course. Scott Olson s'est chargé de la peinture. Le reste de l'équipe constituait le "groupe moteur".

Parmi les quelque quinze baignoires participantes, ce fut celle du Contrôle de la circulation aérienne qui a nettement devancé les autres, procurant à l'équipe une éclatante victoire. Leur attelage leur a valu trois premières places et deux secondes places.

Suggestion Awards/Primes à l'initiative

John Critchley, Moncton, N.B., N.-B.	$605.	Gordon Wastle, Enerby, B.C., C.- B.	$100.
James Byrne and Alex Macdonald, St. John's, Nfld., St-Jean T.-N.	$590.	Claude Cloutier, Sault Ste. Marie, Ont.	$ 90.
(shared award/prime partagée)			
Robert Thingstad, Thunder Bay, Ont.	$215.	John Deroche, Antigonish, N.S., N.-É.	$ 90.
Frank Adams, Ottawa, Ont.	$185.	Neil Wolfe, Mississauga, Ont.	$ 90.
Edward Kluss, Kamloops, B.C., C.-B.	$100.	Jan Koote, Comex, B.C., C.-B.	$ 75.
Sam Sirna, Victoria, B.C., C.-B.	$100.	James Trott, Prince Rupert, B.C., C.-B.	$ 75.



Mrs. Don Jamieson, wife of the Minister of Industry, Trade and Commerce, christened the rail car carrier Sir Robert Bond at St. Catharines, Ont., Sept. 27. Built for MOT, the 7,747 ton vessel will be operated between North Sydney, N.S., and Port-aux-Basques, Nfld. The $12.4 million vessel is capable of carrying rail cars and highway trucks in winter ice conditions.
Le 27 septembre dernier, à St-Catharines (Ont), Mme Don Jamieson, épouse du ministre de l'Industrie et du Commerce, a baptisé le traversier mixte SIR BOBERT BOND. Construit pour le ministère des Transports, le navire de 7,747 tonnes assurera le service entre Sydney (N.-E.) et Port-aux-Basques (T.-N). Il aura coûté 12.4 millions de dollars et pourra transporter des wagons de chemins de fer ainsi que des camions lourds, et ce malgré la présence des glaces en hiver.



M.M. FLEMING AWARDED 1975 FAI DIPLOMA

M. M. FLEMING OBTIENT LE DIPLÔME DE LA F.A.I. POUR 1975

M.M. Fleming, Deputy Administrator, Canadian Air Transportation Administration, has been awarded the 1975 FAI Paul Tissandier Diploma. The Tissandier Diploma is given annually by the Fédération Aéronautique Internationale to those who have made significant contributions to the advancement of international and national aviation. Mr. Fleming was nominated for this distinguished award by the Royal Canadian Flying Clubs Association (RCFCA).

The award was instituted by the first general director of the FAI, Paul Tissandier, some 45 years ago. Only 14 awards of this kind were presented this year for the entire world at the 68th General Conference of the FAI. The conference was held in Ottawa.

M. M. Fleming, Administrateur adjoint, Administration canadienne des transports aériens, a reçu, pour 1975, le diplôme Paul Tissandier de la F.A.I.. La Fédération aéronautique internationale décerne chaque année ce diplôme à ceux qui ont contribué de façon appréciable au progrès de l'aviation nationale et internationale. M. Fleming a été choisi pour ce grand honneur par l'Association royale canadienne des écoles d'aviation.

Cette distinction a été créée il y a 45 ans par le premier Directeur général de la F.A.I., M. Paul Tissandier. Au cours de la 68è conférence générale de la F.A.I. tenue à Ottawa, on en a décerné seulement 14 pour le monde entier.

FIRE PREVENTION AWARD

The Timmins Airport fire department has won the 1974 Class C Category award in the annual Canadian Air Transport Administration fire prevention competitions. From left are Jim Webber and Cliff Dumond, firefighters; Chief Don Cucksey; John Bell of Toronto, emergency services officer; John DeGeit, acting airport manager; and Wayne Orr and Joe Vessel, firefighters.

PRÉVENTION DES INCENDIES — GAGNANT DE 1974

Le service des incendies de l'aéroport de Timmins a remporté le trophée de classe C de 1974, dans le cadre du concours annuel de prévention des incendies organisé par l'Administration canadienne du transport aérien. De gauche à droite, les pompiers Jim Webber, Cliff Dumond, le chef Don Cucksey, John Bell, de Toronto, agent des services d'urgence, le directeur suppléant de l'aéroport, John DeGeit, ainsi que les pompiers Wayne Orr et Joe Vessel.

COAST GUARD LIVES LOST

The pilot and mechanic of a Coast Guard helicopter were killed August 21 attempting a rescue mission in Northern Quebec. Berry Alards, 35, the pilot, and O.N. Coté, 33, the mechanic were searching for survivors of a sunken freighter near Port Burwell in Hudson Strait when the helicopter struck a reef and crashed. The helicopter was attached to the CCGS *Norman McLeod Rogers*, which had been called to the aid of the *Aigle d'Ocean*. The Coast Guard rescued five of the crew of the *Aigle d'Ocean*; four other crew members were lost. Mr. Alards and Mr. Coté were from the Quebec City region.

TRAGÉDIE DANS LA GARDE CÔTIÈRE

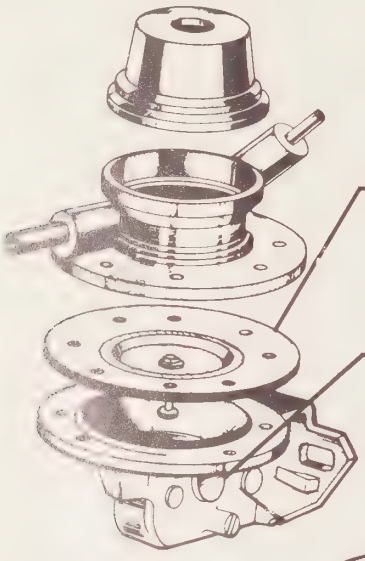
Le 21 août dernier, à Port Burwell (Qué.) M. Berry Alards, 35 ans, pilote et M. O.N. Côté, mécanicien, 33 ans, en service sur le NORMAN MCLEOD ROGERS ont trouvé la mort alors que leur hélicoptère s'est écrasé sur un récif. Le navire de la Garde côtière portait secours aux neuf membres d'équipage de l'AIGLE D'OCÉAN dont quatre devaient périr.

A Canadian Coast Guard uniform was seen on national television last Remembrance Day when Officer Cadet Jo-Anne M. Thorley, a first-year navigation student at Sydney, N.S., placed a wreath at the National War Memorial in Ottawa as representative of the youth of Canada. The daughter of Mr. and Mrs. Thomas Thorley of Petawawa, Ont., Miss Thorley was selected as winner of the Royal Canadian Legion literary contest last year.

On a sans doute vu l'uniforme de la Garde côtière canadienne à la télévision le jour du Souvenir, lorsque l'officier cadet Jo-Anne M. Thorley, étudiante de première année au Collège de Sydney a déposé une couronne de fleurs au monument national à Ottawa au nom de la jeunesse du Canada. Mlle Thorley, fille de M. et de Mme Thomas Thorley de Petawawa en Ontario, a gagné l'an dernier le concours littéraire de la Légion royale canadienne.

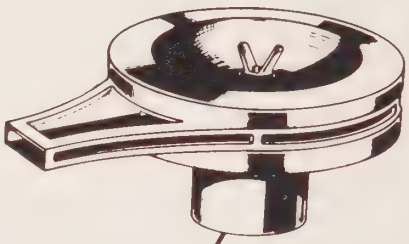
POUR VOUS AND ME

THE CAR / L'AUTOMOBILE

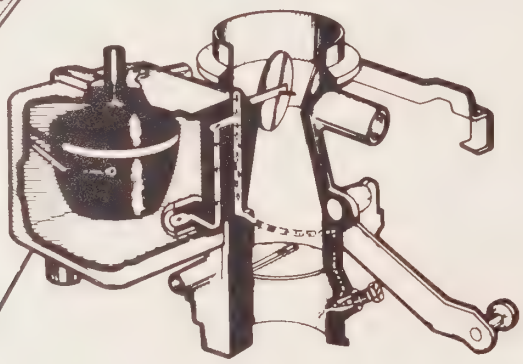


the diaphragm
la membrane

the fuel pump
la pompe à essence

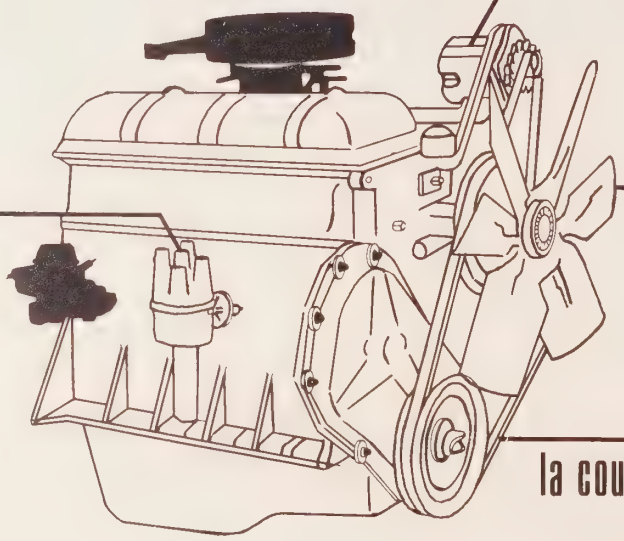


the air cleaner
le filtre à air



the carburator
le carburateur

the alternator
l'alternateur



the ignition distributor
le distributeur d'allumage

the cooling fan
le ventilateur

the fan belt
la courroie de ventilateur

CENTRE DE BILINGUISME
BILINGUALISM CENTER


Dammit, MacIntosh -
for the last time -
Port is left,
Starboard is right
Sapristi, Laframboise -
pour la dernière fois -
le babord est à gauche,
et le tribord est à droite
BEAUHARNOIS
Ray Stone 75



Transport Canada
Transports Canada

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